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### THE POSSIBILITIES AND LIMITATIONS OF LABORATORY DIAGNOSIS.\*

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Medicine has become so large a subject that no one can master the whole of it. To avoid a mere superficial knowledge of a large subject, each one of us, consciously or unconsciously, devotes his best energy and attention to the mastery of one of its smaller divisions. We may call ourselves general practitioners if we will, but I think each of us here tonight will admit that there is one department of medicine in which he is especially interested, and that there are certain kinds of cases which he does not consider himself competent to care for.

Specialism is today necessary for progress, and, consciously or unconsciously, each one of us is a specialist. This is all very well and entirely proper, but it has its drawbacks. Specialism means narrowness, and each gain in special knowledge is bought with a loss of general informa-

tion. What we gain in depth we lose in breadth, and as we dig deeper in our own little field of knowledge our horizon narrows, until finally we see but indistinctly beyond our own circle of interest. I believe that every one engaged in special work feels his narrowness, feels that each gain in special skill and knowledge is paid for by an equivalent loss along other lines; but I think that on account of the peculiar character of my own work, this feeling is brought home to me with special force. The line is more sharply drawn between laboratory medicine and clinical medicine than between any of the clinical specialties. An example will show what I mean. You are attending a case of appendicitis. You call a surgeon to operate. He goes with you, examines the patient, learns all the details of the past history and present condition, and forms his judgment, taking all these points into consideration. You send the laboratory

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man to this same patient to make an examination of the blood. He goes to the bedside, obtains his material, goes back to his laboratory and makes the examination, knowing nothing more of the patient than he can see through his microscope. In a sense he is working in the dark. The line that separates him from the clinician is a far broader one than that separating the internist from the surgeon. The laboratory worker makes many examinations and sees many pathologic conditions, but only rarely has he an opportunity to correlate his findings with clinical conditions. He is seldom able to fit the results of his examination into the picture of the disease from which the patient is suffering, and that is the only way the report of a laboratory examination can be properly interpreted.

Feeling this incompleteness of my own work, if I have one medical hobby it is what might be called "Co-operation in Medicine." This co-operation is largely absent, especially in the relations of the clinician and laboratory man. This is not due to any feeling of hostility between them, but largely to a lack of appreciation of the limitations and possibilities of laboratory diagnosis.

In order to bring about co-operation of this kind, it is necessary for the clinician and the laboratory man to realize that each can help the other in his work. Without the aid of the clinician, without the opportunity that comes from this aid to correlate his laboratory findings with bedside conditions, the work of the laboratory man becomes merely a matter of manual dexterity. Without the knowledge of the patient's condition, the laboratory man must make his report a bare recital of microscopic or chemic findings,

and the report loses half its value to the clinician.

In order to get the best from the laboratory, it is necessary to know its possibilities and limitations, and it is about these that I wish to talk tonight. First, I will discuss them in a general way, then take up some special instances.

How can the laboratory aid the clinician? It can give him accurate knowledge of the condition of the tissues and fluids of the body, of its secretions and excretions, and of adventitious exudates and discharges. This, I think, covers the present field of clinical laboratory work. The laboratory cannot, except in the rarest instances, make diagnoses for the clinician. Just as there are few pathognomic signs and symptoms, so there are few diagnostic laboratory examinations. This, of course, is disappointing and is far from what was fondly hoped when laboratory methods of diagnosis first came into use. Every discovery, every advance in therapeutics, is at first valued at a premium. How often the test of experience discounts this value! A recent example is the Roentgen ray. How far its therapeutic value has fallen short of the hopes of enthusiasts! Yet no one will deny it a place, and an important place, in medical practice, and as we become more and more familiar with the X-ray, what new uses, not dreamed of by its early advocates, are found for it!

So it is with laboratory methods. While many claims have been shown to be extravagant, still as our knowledge of physiological chemistry, of pathology and of bacteriology advances, new possibilities are opened up and new methods devised which gradually reach their true level of value and become established procedures.

And right here the importance of co-operation between the clinician and laboratory man becomes apparent. In order to get the best out of the laboratory, the clinician should remember that his laboratory man is doing clinical work; that he is not solving unknowns. A bare specimen without any indication of its character, or what is wanted by the physician sending it, is of little value. Frequently specimens are sent to me unaccompanied by any information, of whose character I have not the slightest idea. An example will illustrate my meaning. Recently a jar was sent to me containing material which, from its appearance, might have been stomach contents, feces, or curettings in formalin. What should I do with it? Treat it as curettings, stomach contents, or feces? The examination required for any one of the three is entirely different from that required for either of the other two. If I guess wrong, I not only make a useless examination, but ruin the material for the examination wanted. After considerable delay I reached the physician by telephone and found out that the specimen was feces and that he suspected malignant disease of the rectum and wanted to know if the specimen contained any material from which the condition could be diagnosed. Now granting that I had guessed right and considered the specimen to be feces, how could I tell that it was to be examined for carcinoma and not for tubercle bacilli, or in some other way? I do not know: perhaps some one can tell me.

In this particular instance, the lack of information was accidental. The physician had intended to give me the desired information, but in the press of work, he had forgotten to do so. Others fail, not

because they are unwilling to give the information, but because the necessity of it is not apparent to them. I remember one specimen that came to me without sufficient data. I asked the attending physician for the missing information, and was told that he had purposely withheld it because he thought by so doing he would get a more unbiased report. I am sure no personal affront was intended, but I think that such an attitude is unpardonable. Such lack of confidence on the part of the clinician in the fairness and judgment of the laboratory man puts the latter in a position unfair to both. The more we know of material sent to us, of the conditions under which it was obtained, of the past history and present condition of the patient, the more information can we derive from examination of that specimen.

To leave generalities and to mention a few specific instances of the laboratory's possibilities and limitations, I will speak first of urinary analysis.

The examination of the urine is one of the most useful and common clinical examinations, and while the laboratory man can make an examination satisfactory to the physician with perhaps less knowledge of the patient than is required for almost any other, still there is a limit to his abilities in this case. For example, I have occasionally sent a report on a urine containing a faint trace of albumin, an occasional hyaline cast and a few pus cells to the physician, and have been asked: "What is your diagnosis?" I have to answer his question by asking another: "What is the matter with the patient?" I cannot tell the significance of an occasional hyaline cast when I know nothing of the condition of the patient. It

has been shown that an occasional hyaline cast is frequently found in the urine of a perfectly healthy person. On the other hand, the appearance of a few hyalines may be the first sign of danger, or may point to the clearing up of a condition that has been serious. I cannot tell what the urinary findings mean, unless I know the condition and previous history of the patient. This brings me back to the point I made a few moments ago, that the laboratory report, by itself, is rarely diagnostic, but must be fitted into the picture of the disease to be properly interpreted.

Another point I should like to make in regard to urinary analysis is the value of 24-hour specimens and of quantitative examinations of urinary constituents.

In the first place, the quantity of the urine varies from time to time during the day. During the hours of exercise and during digestion the work thrown on the kidneys is greater than during the hours of rest and fasting; therefore, if the amount of work the kidneys are doing is to be determined, conclusions based on a single sample will be erroneous, due to the normal variations of solids excreted at various times of the day. If the mere presence of abnormal substances in the urine is to be determined, the sample should be taken at the time when the kidney is doing its hardest work, i. e., during the hours of exercise, a few hours after the heartiest meal of the day, because when the kidney is working hardest, abnormal substances will be likely to be present in greatest abundance. Inasmuch as the kidney is doing its least work early in the morning, the early morning specimen is the poorest

for examination, not the best, as is generally supposed.

In general, quantitative estimations of urinary solids are worthless unless the 24-hour amount is known. What one wants to learn from quantitative estimations is the daily excretion of urinary constituents, as urea, albumin or sugar. Percentages give no idea of the daily excretion.

For example, I recently examined a urine which contained 6.5 per cent. of sugar. A few days later the same urine contained 7.5 per cent. This was an apparent increase. However, on the first occasion the patient passed 5200 c. c. in 24 hours, making the excretion of sugar 338 grams. On the second occasion, the 24 hours' quantity was 4300 c. c., making the excretion 322.5 grams—a decrease in the sugar excretion in spite of the increase in percentage.

I have grave doubts of the value of single urea estimations. The amount of nitrogen excreted by the kidneys is dependent on too many factors for very definite conclusions to be drawn from a single estimation. The amount of nitrogenous food taken in and the amount of nitrogen excreted in the feces and sweat must all be considered. I cannot, however, subscribe to the opinion that urea estimations are valueless. While it has been pretty definitely shown that retention of urea is not of itself the cause of uremia, and that a faulty excretion of urea is not proof that the kidney is failing to properly excrete other solids, ordinarily uremia is accompanied by a decreased amount of urea in the urine and a urea excretion constantly below the normal average should be considered a sign of danger.



I do not believe that the estimation of the daily excretion of uric acid is, in the present state of our knowledge, of any value whatever. Haig's writings on uric acid have had a wide influence in the profession, but it has been shown that his experiments were faulty, his results erroneous, and that there are many factors to be considered which he left out of consideration. I do not believe that we know enough concerning the formation of uric acid in the body and its excretion from the body to make his urea-uric acid ratio of any clinical value.

Albumin percentages are likely to be deceptive. We have two ways of expressing the percentage of albumin present in a urine: percentage by bulk and percentage by weight. By bulk percentage, I mean that proportion of the volume of the urine occupied by the precipitated albumin after it has been packed as closely as possible by centrifugalization. This bulk percentage may be very large, running sometimes up to 30 or 40 per cent. By weight percentage, I mean weight of the precipitated albumin compared with the weight of urine from which it has been precipitated. This percentage by weight represents the actual amount of albumin in 100 c.c. of urine. The weight percentage is to the bulk percentage as 1 is to 60. Thirty per cent. of albumin by bulk would be really only 0.5 per cent, or 0.5 gram in 100 grams of urine. One per cent. of albumin by weight in a urine is a very large amount. It is sufficient to make the urine boil solid. I have never seen a urine containing as much albumin as this. When we remember that white of egg contains only about 10 per cent. albumin we realize that the enormous percentages

of albumin sometimes reported are impossibilities.

In bacteriologic diagnosis it is almost always necessary for the examiner to know something of the patient's history and condition and of the conditions under which the material for examination was obtained. The identification of bacteria is frequently a long process impractical for clinical work. When a physician sends material for bacteriologic examination to the laboratory he wants a report within a reasonable time. He cannot afford to wait weeks or months for a report, and he cannot afford to pay for a long series of experiments. This reduces the bacteriologist to a few simple procedures for identification of the bacteria he is dealing with. These are: (1) source; (2) morphology of the organism; (3) motility; (4) reaction to special stains; (5) appearance of the growth on the ordinary culture media.

It is of the utmost importance to know the source of the material sent for examination. Of course, in certain cases this is self-evident. A sputum is a sputum, and can ordinarily be recognized, although I have received material I could not identify, which proved to be sputum.

It is important, for example, to know whether pus comes from the urethra, the abdominal cavity, or from some exposed surface of the body, for we expect a different class of micro-organism in these three locations. It is important to know whether an exudate comes from the abdominal or the pleural cavity.

It is also necessary to know the present condition and past history of the patient, or at least to know what the physician suspects. The technic of the examina-

tion for tubercle bacilli, for example, is entirely different from the technic of the examination for gonococci. It is impossible for the laboratory man to make all possible examinations in the hope of making the one that the physician wants.

Even with all available data at hand, it is sometimes impossible to positively identify bacteria found. For example, the gonococcus has certain characteristics of morphology, staining properties and position in the pus cells. There are, however, other bacteria that possess one of all of these characteristics.

This is especially true in urine. There may be several bacteria present in the urine having the morphology and staining properties of the gonococcus. This makes the examination of the urine for gonococci very unsatisfactory. There may be bacteria in the urethra possessing all the characteristics of the gonococcus I have mentioned, i. e., morphology, staining properties and intra-cellular position. They do not, however, produce the clinical condition known as gonorrhea. The microscopist cannot, therefore, positively report gonococci. He can only say that the microscopic appearances are typical of the gonococcus, and leave it to the clinician to determine whether or not the history and condition of the patient are consistent with the presence of the gonococcus.

The same difficulty is encountered in distinguishing the typhoid bacillus from the colon bacillus. These two bacteria have the same reaction to special stains, are similar in morphology, and the appearance of the growth on the ordinary culture media is much alike. I do not mean to say that there are no differences. The typhoid bacillus is more slender and

motile than the colon bacillus, but in any given instance we are confronted with the question: "Have we an unusually slender and motile colon bacillus, or an unusually thick and sluggish typhoid bacillus?" The growth of the colon bacillus on the ordinary media is heavier than that of the typhoid bacillus, but in every special case we must ask ourselves: "Is this a luxuriantly growing typhoid bacillus or a poorly growing colon bacillus?" The question is further complicated by the existence of a large number of bacteria, the so-called para-typhoids and para-colons, which closely resemble both. Under these circumstances, it is impossible to do more than make a probable diagnosis, and to do even this we need all available data at hand.

The examination of sputum for tubercle is comparatively simple, and the possibility of the presence of other bacteria resembling them is so small that if bacteria resembling the tubercle bacillus are found the microscopic diagnosis can be made with reasonable certainty.

In examinations of urine for tubercle bacilli the case is far different. The smegma bacillus must always be reckoned with. Recent work by Young and Churchman seems to show that differential stains are not to be relied on in distinguishing the tubercle from the smegma bacillus. According to their work, the smegma bacillus is never found back of the cut off muscle. They advise before collecting urine for examination for tubercle bacilli that the glans penis be thoroughly cleansed, and that the anterior urethra be thoroughly irrigated with some bland fluid, not with the idea of sterilization but because a copious irrigation will wash the anterior urethra free from any-

thing that would be carried along by the stream of urine. They believe that in this way urine suitable for examination for tubercle bacilli can be obtained. Their work was done entirely with men. If urine for examination is to be obtained from a woman I would suggest a careful cleansing of the vulva and meatus of the urethra, and the withdrawal of the urine by means of a sterile catheter.

Tubercle bacilli are rarely found microscopically in the discharge from tuberculous abscesses or sinuses. Curettings from the abscess or sinus wall should be sent, and search should be made for the histologic changes characteristic of tuberculosis rather than for the tubercle bacilli themselves.

The Widal agglutination test for typhoid fever, while usually satisfactory, is sometimes unsatisfactory. This is due to two causes: Different cultures of the typhoid bacillus possess different agglutinating power, and the time of the appearance of the agglutinins in the blood of typhoid fever patients is variable, rarely appearing before the end of the first week. Therefore, one should never be disturbed in a diagnosis of typhoid fever made on good clinical grounds, and in the doubtful cases should not be satisfied with a single test.

The examination of the blood is a field that has been full of information, although some of the expectations of the early workers have not been fulfilled. It was at first thought that many diseases would be diagnosed by blood examinations. This is true in a limited number of cases, but the information to be gained by blood examinations has steadily increased as our knowledge of the blood

and the technic of its examination have advanced.

Pernicious anemia, the leukemias and malaria are striking instances of diseases which may be diagnosed by blood examinations, but such diseases are few in number.

The general information which may be gained from blood examinations is often great. Is the patient anemic? If so, how anemic? Is a leucocytosis present? If so, what is its character? All these questions may be answered and may be of great importance to the clinician in making his diagnosis or prognosis, or in mapping out his course of treatment. The causes producing an anemia or a leucocytosis are many, and in order to determine its significance the history and condition of the patient must be known. For example, a hemorrhage will cause an anemia as well as lack of hydrochloric acid in the gastric juice. A pneumonia will cause a leucocytosis as well as a pus pocket. I have no doubt the reports of blood examinations often seem indefinite and little to the point, but unless we know the condition of the patient, the best we can do is to report our findings and leave their interpretation to the clinician.

An instance of the value of a blood examination which, in itself, was not at all diagnostic, occurs to me. In the summer of 1904, a physician called me by telephone and said that he had a patient suffering from some obscure symptoms, that the man had been treated by several physicians without improvement, that he was anxious to make a diagnosis and suspected some blood parasite, mentioning that of Rocky Mountain fever as probable. I examined the blood, found evidence of concentration of the blood rather than

any anemia. I was able to find no parasites. I telephoned my report to the physician, who was distinctly disappointed. He said that it was of little value to him and that what he wanted was a diagnosis. I found that the patient had just returned from South America and that he had a dysentery. The only condition which I thought could explain the dysentery, weakness and concentration of blood was some form of intestinal parasite. I obtained some fresh feces, examined them on a warm stage, and found numerous amebæ. In this instance the first thing that made me suspect the possibility of an intestinal parasite was the blood picture. Then, finding that the history and condition of the patient warranted such a diagnosis, I suggested an examination of the feces.

The examination of gastric contents gives valuable information to the clinician. In order to draw correct conclusions from the examination it is necessary to know the character and amount of the test breakfast and the length of time that has elapsed from ingestion of the meal to the withdrawing—for all these things have an influence on the conditions found.

The clinical examination of breast milk is frequently of importance. The first question that occurs to the physician, if the baby fails to gain in weight, or if there are evidences of faulty digestion, is: "Is the breast milk normal in quantity and quality?" The question of quality is to be determined by examination. For this purpose it is important to have either the middle portion of the milking, or, better, the entire milking from one breast. The first portion of milk drawn is relatively richer in proteids and poorer in

fat, and the last portion is poor in proteid and rich in fat.

In examinations of tissue and curettings, knowledge of the patient's condition is frequently important. It is of the utmost importance for the pathologist to know from what part of the body, a piece of tissue comes, and it is also important that the amount of tissue sent be sufficient for him to get an idea of the arrangement of the cellular elements and their relation to other structures and to each other. A bit of tissue as big as a pin head is almost useless for pathologic examinations. The pathologist makes his diagnosis as much from the arrangement of the cells and their relations as from the character of the cells themselves. It is practically impossible for him to distinguish a cancer cell from other epithelial cells unless he can see its arrangement in the tissue and the relation to the other kinds of tissue present.

It is also important that the tissue is not allowed to dry up or decompose before it reaches the pathologist's hands. Tissue to be used for examination should be placed at once in 4 per cent formalin.

A recent instance of the necessity of the pathologist's knowing the condition of the patient occurred only a few weeks ago. A piece of tissue was sent for examination. A report was made that while the tissue changes were not characteristic, they were very suspicious of malignancy. The attending physician then talked the case over with the pathologist, and a consideration of the patient's past history and present condition, together with the histologic findings, made it practically certain that the condition was specific and not malignant. This is only a



single instance of what is occurring frequently.

In this brief discussion of the possibilities and limitations of laboratory diagnosis it may be that I have dwelt on the limitations more than on its possibilities. This is by no means because I think the laboratory is not of great use to the clinician, but because I think that confession is good for the soul and that the very worst policy for one who has the advancement of his own work at heart is to pretend to do what he knows he cannot do.

What, then, are the possibilities of laboratory diagnosis? The laboratory can give to the clinician many aids in making his diagnosis. Examinations of the urine, blood, or other fluids, secretions and excretions of the body frequently will swing the weight of evidence from one side of the balance to the other and determine a doubtful diagnosis. Frequently with a diagnosis made, exact information gained from the laboratory will be of great value for prognosis or will suggest important modifications of treatment.

What are the limitations of laboratory diagnosis? The laboratory cannot, except in a few instances, make diagnoses for

the clinician. The more complete the co-operation between the clinician and laboratory man is, the more information can the worker in the laboratory give the practising physician, and with increasing opportunity to correlate laboratory findings with clinical conditions will come an increasing ability to determine the significance of pathologic changes in a given case.

Co-operation will do this for the clinician. It will broaden the scope of laboratory diagnosis, increase its possibilities and wipe out many of its present limitations, and it will make the laboratory worker more and more of a laboratory diagnostician and less and less of a mere technical expert with the test tube and microscope.

The clinician and the laboratory worker can never clash. The clinician has no time to spend with the details of laboratory technic, and the laboratory man becomes, by the very nature of his work, unfitted to treat patients. The benefit of a hearty and intelligent co-operation will be to the advantage of one as much as to the other.

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Pyuria without symptoms is suspicious of an early tuberculosis of the urinary tract.

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When cleansing the vagina and vulva in preparation for an operation, a soft cotton mop should be used for the vestibule; a stiff brush is too apt to bruise or lacerate the urethra and cause dysuria for some days thereafter.

Frontal sinus suppuration rarely requires a disfiguring operation for its relief. It can usually be satisfactorily drained through a small opening in the line of the eyebrow, internal to the supra-orbital nerve, the (fenestrated) drainage tube being carried into the nose.

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Grocers' paper bags are well-adapted receptacles for soiled dressings.

## PHYSICAL DISTURBANCES IN DISTANT PARTS OF THE BODY DUE TO EYE-STRAIN \*

J. G. HUIZINGA, M. D.

Grand Rapids.

Dr. Geo. M. Gould<sup>1</sup> has, in his usual unique way, awakened the profession to the fact that the relation of eye-strain to disturbances in different parts of the body is not sufficiently well known or considered. In one of his articles, he successfully proves that this subject has received only the most meager attention at the hands of the medical literateur, and not unnaturally draws the conclusion that the profession must be quite ignorant of such relationship.

When a person has been thoroughly familiar with certain facts, and has publicly taught them for something more than ten years, he may be excused for thinking that "everybody knew all about them." I thought so in regard to the question we are about to discuss, and that is the reason for the presentation of this paper before this society.

The question to which I ask your consideration and frank discussion is,—Does eye-strain ever cause disturbances, functional or organic, in parts of the body not intimately associated with the eye? Let us see whether a definite, affirmative answer can be given to this question. Necessarily the answer can only be obtained

from clinical evidence.

Schoen<sup>2</sup> reports having cured over one hundred patients suffering from gastric catarrh, dilation, nervous dyspepsia, functional and organic heart disturbances, Basedow's disease, neurasthenia, etc. In all these cases he found a definite ocular disturbance, the removal of which cured the chronic disease. He believes that pneumogastric irritation is the cause of these manifold symptoms, and that this irritation is the result of the constant demand on the innervation of the patient in his efforts to obtain binocular vision.

Miller<sup>3</sup> was able to banish evidences of irritation of the vagus and a diversified train of symptoms in ten cases by correction with prisms of an existing upward squint. His first patient was a woman who had suffered for months from extreme nervousness, oppression and cramps in the stomach, eructations, loss of appetite, nausea, cardiac oppression and other symptoms of pronounced neurasthenia. She also suffered excessively from sea-sickness, and from neusea when riding in the cars or swinging. Correction of the squint banished, at once, all these symptoms in this and in all the other cases.

The work done by Ranney<sup>4</sup> is perhaps well known to every one present. As

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early as 1896 he reported over twenty cases of epilepsy greatly improved, or entirely cured, by means of treatment directed towards obtaining normal binocular vision. His reply<sup>5</sup> to Dr. Peterson is especially convincing, and leaves little to be desired so far as proof is required to fortify his contentions. A little over a year ago he again reported ten illustrative cases showing the varied and serious conditions that may have their origin in eye-strain. Among them are wry-neck, progressive deformity of the head, arms and hands, complete nervous prostration, loss of power of walking accompanied by severe spinal pain, etc.

Lewis reported one case of indigestion<sup>6</sup>, one case of rheumatism, and one case of insanity<sup>7</sup> cured by means of proper fitting glasses.

At the last annual meeting of this body, Bulson,<sup>8</sup> in a very conservative paper, reported a number of cases of various nervous disturbances, including menstrual irregularities, nervous prostration, insomnia, chorea, absent mindedness, gastric disturbances, chronic constipation, that were cured by correcting the ocular irregularities, that were present in every case.

Gould,<sup>9</sup> in a very instructive paper, has shown the relation between certain forms of astigmatism and scoliosis in school children. Oliver<sup>10</sup> reports a peculiar case of urticaria due to eye-strain, and cured by wearing of proper glasses. Every time the glasses were left off, or when improper ones had been fitted, the urticaria would return, only to be cured again when the proper lenses had been adjusted. This case was carefully followed up for some years, and is a convincing argument on the reflex influence of eye-strain. In this case the urticaria may have been the

result of some derangement in the stomach, which in turn was the result of eye-strain.

The above reported cases are only a few of those found in medical literature, but they are sufficient to establish the fact that *under certain conditions* eye-strain may cause almost any form of functional disturbance in any part of the body, and functional disturbance, if only continued long enough, will frequently lead to organic changes.

Permit me also to report three cases that I have selected from a large number which I have met with; and my reason for reporting these cases is not so much to convince the profession of the possibility of such disturbances, but rather to point out the reasons why such disturbances do take place, and what the required conditions are for their manifestation. Medical writers have rarely attempted to explain why such disturbances should occur, and many of the reported cases perhaps do not contain all the data necessary for forming the basis of opinions that could be of any scientific value.

In presenting the clinical features of these cases I have omitted all unimportant details, and reported only what I believed to be of value in the discussion of this subject.

The first case is that of a boy of 14 years, whose refraction error had been improperly corrected some years previously, and who, since that time, had suffered more or less from all the ordinary symptoms of eye-strain, and in addition thereto had gradually developed gastro-intestinal disturbances, a condition of malaise similar to that due to malarial intoxication, a loss of muscular tone and vigor, gradually losing flesh, and growing weaker. He was obliged to leave school, and eventually became so weak that he could not walk the length of an ordinary city block without being obliged to sit down and rest. His father

being a physician, no efforts were spared to bring the boy back to normal health. As one of Chicago's most prominent oculists had refracted his eyes, there was no suspicion that they could be at fault. The tonsils were slightly enlarged, and in desperation they were seized upon as the root and cause of all this trouble. A nose and throat specialist of national reputation was called in, and the tonsils and adenoids were removed. The operation seemed to give a slight temporary relief, but soon the boy was as poorly as ever. About this time he was referred to me for new glasses. The examination so exhausted him that he was obliged to stay in the city and go to bed. His stomach refused to accept anything for nearly 36 hours, and then only the mildest liquid diet together with liquid peptenoids. In a week he had regained sufficient strength to return home, though still very weak. The new glasses made him feel much more comfortable, and gradually day by day he gained in strength, and within a month, to use his own expression, he was playing base ball with his boy companions. This was eight years ago. He has been under my observation more or less constantly ever since. He is today a fully developed young man, and perfectly healthy so long as he wears his glasses. But no sooner does he leave them off for any considerable length of time than all the old symptoms reassert themselves, though in a less degree than formerly.

Two points in this case call for special consideration, which I have purposely omitted so that I might mention them by themselves. First the boy had inherited a distinct neuropathic disposition, and secondly, the age of puberty. The result of powerful over-excitation of certain muscles and nerves, together with a congenitally weakened nervous system intensified by the general nervous strain and excitability of the age of puberty, seems to me to reasonably explain the intenseness of the reflex nervous phenomena of this case.

Case II. A girl of seven years, who had for two years been more or less constantly under physicians' care for nausea, vomiting, a general tired out feeling, and pains in the lower limbs. The child appeared fairly well nourished and of normal development, and apparently well in every respect. Her father has very decided nervous troubles, and it is probable that the child has inherited a certain nerve weakness. She was brought to me for accommodative asthenopia due to hyperopia. Being quite busy at the time, I did not question the mother very carefully on the general condition of the child, and attended simply to the correction of the hyperopia. Three

months afterwards the mother brought the child back to me, and then gave me a detailed account of the child's history previous to the wearing of her glasses, and told me of the total disappearance of all her troubles as soon as she had received her glasses. This case made a very strong impression on my mind, especially because the people are unusually intelligent, and had voluntarily come back to tell me of it. Not a single leading question was asked, and we all know that some patients can be made to give a history of almost any combination of symptoms, if only leading questions are asked. Whenever the glasses are left off the old symptoms reassert themselves. I have ascertained that the child has naturally a weak stomach, and that certain kinds of food always easily distressed her.

In this case two important etiological factors must be recognized, viz., a probable congenitally weakened nervous system and a weak stomach. Their relation to the disturbances mentioned as results of eye-strain will be discussed more fully later on.

Case III. A robust, well developed, physically perfect young man without any discoverable hereditary taint or dyscrasia, aside from the fact that nearly everyone in the relation has a greater or less degree of refractive error, and most of them quite complicated. Fifteen years ago I examined him, and found that he had a compound hyperopic astigmatism, with diverging axes, and a slight hyperphoria. This was in 1891. Two years previously another physician had also found a very similar condition, and had given glasses for it. The hyperopic astigmatism was corrected. Nothing was done for the hyperphoria, as the glasses given apparently made the eyes feel very comfortable. I quote the following from a letter written by himself, giving his subsequent experiences:

"In 1893 I was studying at an eastern university, and during the winter my eyes gave me much trouble. Frequent headaches, inflammation and soreness often prevented me from doing any study at night. One morning in the spring I woke up feeling too dizzy to stand. The doctor thought it was indigestion, but the effects of this dizziness and nausea continued in quite marked form for several months. Perhaps vertigo would better describe it. During nearly all this time my eyes were so sore that it was very painful to touch them or press them with my fingers.

In the spring of 1895 the same trouble reoccurred, and I went to see a general practitioner about it. He sent me around to several specialists, and



after some weeks we concluded that my eyes were the main cause of the trouble. An oculist found about five degrees of vertical muscular error. This was corrected in my glasses, and I have been wearing these glasses with  $2\frac{1}{2}$ -degree prisms in them ever since. After two or three years the vertigo disappeared, and it is very seldom now that it returns. The fact, however, that it returns now occasionally when I have a severe cold makes me think that my catarrhal condition may have had a great deal to do with my former troubles also. During all that time I was troubled with catarrh, but the specialists did not seem to think that the vertigo could be caused by it. One of the oculists also, was sure that eye-strain did not cause it, and while since wearing these prism glasses I have begun to feel better, still I am not fully convinced that they necessarily have been the only cause of it. My general health has improved very much, and I have to some extent mastered the catarrh. All this together I would rather give as the reason for being free from the vertigo today."

About eight years ago he consulted me concerning his catarrh. Examination disclosed a suppurative ethmoiditis. The cells were carefully curetted and cleaned, and treated for several weeks, followed by still greater improvement than he had previously obtained from his glasses, as the letter shows. In this case there was no evidence of any debilitated or weakened nervous system, nor of any debilitated or weakened condition of the abdominal viscera.

Let us see what light these cases may throw on the question, how to explain or account for such disturbances. This is a difficult question indeed, and while I do not pretend to solve the problem completely, permit me nevertheless to offer a few suggestions.

1st. It seems to me that the analogy between reflex disturbances due to eye-strain and reflex disturbances due to powerful psychical impression is quite close. Take, for instance, the faintness, dizziness, nausea, and vomiting that some persons suffer from when they are only witnessing even a minor surgical operation such as extracting a tooth. This so-called psychical vomiting is something with

which we are all very familiar. A similar relationship is present in cases of neurogastric disturbances due to a small ulceration of erosion of the cervix uteri, and of cardiac irregularity and certain forms of dyspepsia, and asthma due to nasal disease.

Homer Wakefield<sup>11</sup> has pointed out that "fatigues, strains, pressures, etc., when prolonged, operate through connecting nerves to produce tetanies of opposite nerve endings. An application of this knowledge to eye-strain shows how, according to the degree and duration, a tetany may be induced and maintained at distant nerve distributions directly, or by primarily affecting cerebral centers and indirectly, tetanies of dependent areas may be in evidence. The nerve ending tetany of eye-strain being continuous, the suboxidation and the increased generation of metabolic products augments the terminal subkatabolism, and according to the degree and intercurrent influences and modifications, produces such manifestations as hyperesthesia, perhaps twitching, contraction, pain, convulsions, flaccid relaxation, anesthesia, expansion, hemorrhages, ulceration, etc."

If the doctrine of reflex nervous excitability and disturbance is well established, and it is admittedly so, then it is possible, and it may be expected that such disturbances as are indicated in this paper may appear whenever the conditions for them are favorable.

2nd. That eye-strain alone cannot be held responsible for such pronounced disturbances, as are occasionally met with, is proved by the fact that such a very small percentage of cases of uncomplicated eye-strain produce such disturbances, and consequently we must look for

certain other attending conditions or circumstances, the combination of which, together with eye-strain, would solve the etiological difficulty. What these conditions are, and why one person is more profoundly affected by them than another, is the question to be answered, and it seems to me that at least a partial explanation may be found in the fact that in nearly every one of these extreme cases of reflex disturbance, there is an increased irritability of the organ or organs affected on account of some subnormal condition present, perhaps only in a minor degree, or a tendency toward certain nerve weaknesses or neuroses, which alone, however, are not sufficient to produce the symptoms complained of, but where powerful and continuous nervous reflexes added, act as the proverbial last straw to break the camel's back.

For instance, a person suffering from an irritated condition of the gastric mucous membrane, whatever its cause, might suffer only slight, or practically no inconvenience therefrom, at least not sufficient to call for medical attention. But let this already irritated stomach receive powerful reflex nervous impulses, whatever their origin, and it can easily be understood how the added nervous excitability and exaggerated nervous impulses added to the already existing condition, might bring about a subkatabolic state, the results of which have been so well described by Wakefield. And if to this be added an inherited neuropathic tendency and an impressionable disposition, it seems to me that we have all the conditions necessary to produce the disturbances mentioned. The case of the little girl, already mentioned, is an admirable illustration of this theory. And the reason why one person

suffers less profoundly from these reflex disturbances than another, seems to me, finds a logical explanation in the fact that in some persons one or more of the several causative factors as mentioned is wanting or is present only in a negligible degree.

3rd. Another explanation is suggested by the fourth case reported, in which there were no evidences of any nerve or visceral disturbance, except those which were purely reflex, but while the patient was suffering from a complicated refractive error, together with a hyperphoria, he afterwards developed a suppurative ethmoiditis. The relief of the eye-strain and muscular error did result in a considerable improvement, but no cure as such had been obtained. This did not take place until the attending ethmoiditis was also treated and cured, so that we may infer from this and other similar cases, that when two or more sources of more or less continuous irritation exist, they are likely to be attended by powerful reflex disturbances which would not take place if there were only one source of irritation. The first case reported also bears out this deduction though to a less degree. The slight and transient improvement following the tonsilotomy and adenectomy would tend to confirm this view.

Whenever the body as a whole is in a physically and functionally perfect state, it is highly improbable that ordinary irritation from any single source will be followed by such marked reflex disturbances as those manifested in the cases reported. I am firmly convinced that the healthy organism is fully capable of neutralizing the baneful effects of simple irritations; but also, that there is a numerical limit beyond which

such irritations may not safely go. In other words, if the doctrine of functional compensation is well established, then the baneful influences of a single source of irritation is likely to have an extremely limited field of action, but it is not unreasonable to expect that as the sources of irritation increase, both numerically and in intensity, that then we will sooner or later reach the limit of the compensatory powers of the organism, and so-called reflex disturbances must follow.

In the fourth case reported there were practically no reflex disturbances from the eye-strain alone, so long as it was not complicated with the ethmoiditis, but as the ethmoiditis appeared and increased in intensity, the reflex disturbance also began to appear and to increase. That ethmoiditis alone cannot be held accountable for these disturbances is borne out by the fact that relatively few uncomplicated cases of this disease are accompanied by them.

While we are thus forced to admit that eye-strain may and does occasionally cause disturbances in distant parts of the body, we must not forget that in the etiology of the vast majority of these disturbances, eye-strain, while a very important factor, is generally only one of several

factors, each one of which must receive proper recognition. It is true that many of these disturbances cannot be relieved without relieving the attending eye-strain, but it is equally true that the vast majority also require other treatment in addition to glasses, in order to obtain permanent results. In the cases I have cited above, you have noticed that each one had been under professional care for a longer or shorter period of time before having their eyes treated, and it is presumed that they all received proper treatment so far as the general physician is concerned, but that the one thing that was lacking to complete the cure was glasses. But it does not seem rational to me that glasses should receive all the credit for the results obtained, and that no credit should be given to the treatment administered previously.

It is exceptional for the oculist to see these cases before they have been under the care of the family physician, but in the few cases that I have met with at this stage, I have invariably found while glasses gave considerable relief, they did not entirely relieve all the trouble, and subsequent treatment by the family physician was needed to bring about a complete cure.

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#### Discussion.

Dr. A. E. Bulson, Jackson, has had many cases of nervous affections of long standing finally discovered to be due to errors of refraction. These cases are often treated for numerous things by the general practitioner. He mentioned one case of chorea and nervous breakdown in a girl, cured

by correction of refractive error. This patient had had indigestion, dysmenorrhea, and anorexia, but was well in three months. Believes many intractable cases of chorea may be referred to the oculist with hope of benefit.

## THE TREATMENT OF UNUNITED AND COMPOUND FRACTURES WITH BONE PINS\*

A. I. LAWBAUGH, M. D.  
Calumet.

Ununited fractures are a source of great annoyance to the patient and frequently cause the medical attendant many anxious moments. The causes of non-union are to be sought in local conditions affecting the process of repair at the seat of fracture, or in constitutional tendencies or diseases that act locally in retarding or preventing union.

The chief local causes are imperfect fixation, unreduced deformity, the intrusion between the fragments of tendon, fascia or even muscle, necrosis, and more rarely the development of a malignant growth at the seat of injury, as, for example, an osteosarcoma. Imperfect fixation is by far the most common cause, but cannot always be prevented. Certain fractures cannot by the use of any device be kept at rest if muscular contraction, either voluntary or involuntary, that disturb them is persistent in spite of the apparatus or method used.

Any constitutional disease so affecting the osseous system that a predisposition to fracture is produced, is very likely to delay or wholly prevent union after fracture, through disturbances or failure of the processes of repair. Ununited fractures occur, therefore, very frequently in

rachitic and syphilitic subjects as well as in those affected with osteomalacia.

Fortunately, non-union is of far less common occurrence than formerly; particularly is this true of fractures of the leg. The improved results are, I believe, to be attributed largely to the almost universal employment of plaster of paris or some other form of fixed dressing. Moreover, the recent application of Roentgen rays as an aid in locating and defining fractures has been of great benefit in securing more perfect coaptation of fragments and consequently their early union.

The treatment of delayed union or of non-union of fractures consists essentially in prolonged fixation. When the failure to unite has persisted for several months—three months according to the majority of authorities—and when uninfluenced by prolonged fixation, the fracture may properly be called reunited. Under these conditions some special management of the case becomes indicated, and should be carried out. The fragments may be rubbed forcibly together in the hope that the irritation and congestion so produced may excite anew the reparative processes. In the case of a bone of the lower extremity some form of apparatus may be applied that, while permitting the use of the limb also gives fixation, so that as the result

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of the movements of the fragments an increased reparative reaction may be brought about. To the same end the fragments may be drilled in various directions under proper aseptic precautions, the aim of the drilling being to excite a traumatic and non-infective inflammation.

Never very satisfactory, these various methods of temporizing with ununited fractures have gradually fallen into disuse, since more radical operations, formerly very dangerous, have through improved surgical technic, become comparatively safe. In general, it is best to follow the principle that any fracture failing to unite after three months of careful treatment should be regarded as a proper subject for operative procedures.

Whether the defect is in the fore-arm, leg or thigh, the operation consists in exposing the seat of fracture by incision and dissection, isolating the fragments from their surroundings, and after thoroughly freshening their ends, uniting them by means of some form of suture or retaining material.

The ends may be scraped after the manner of Volkmann, or beveled according to the method of Diffenbach. The suture or retaining material used may be silver wire, silkworm gut, pins or screws. The wound is then closed and treated in all respects as a case of recent compound fracture similarly dealt with. Senn uses a bone ferrule, and this in his hands has proved very effective, holding the parts effectually, and being absorbed without

causing any irritation. The only disadvantage that can be urged against this method is the difficulty in obtaining these ferrules. In the case of a large city or institution such material could, no doubt, be easily obtained.

Silver wire is used quite extensively and is very efficient, but the fact that it sometimes causes irritation and must be removed, forms an important objection to its use. In my own work I prefer the use of ivory nails or pins for the purpose of fixation in both compound and ununited fractures whenever such a method is indicated. Two pins are used, unless the bone is small, as in the case of the radius or ulna, and even then the two small pins are preferable to a single large one. The pins are placed at an angle with one another so as to brace the fragments. To give additional firmness to the parts, I also place a strong piece of kangaroo tendon around the fragment. This is absorbed, as are the pins, and causes no irritation.

In closing, I should say that I urge the use of bone pins for the following reasons:

1st. The parts are held more firmly than by any other method.

2nd. The ivory pins can be thoroughly sterilized, and are applied with as great or even greater ease than any other material.

3rd. They cause no irritation, are completely absorbed, and nothing more is heard of them.

#### DISCUSSION.

**Dr. C. S. Oakman**, Detroit: Indications for open treatment of recent closed fractures are inability to attain and maintain approximation, due for instance to interposition of soft parts, and proximity to joints. Retentive material is preferably absorbable.

**Dr. H. O. Walker**, Detroit, commended the use of ivory pins, because absorbable. For a dif-

ficult case of fracture of the thigh, he had used an ordinary long screw such as carpenters use, and later had removed it.

**Dr. C. B. G. de Nancrede**, Ann Arbor, spoke of the use of "wood" screws and two silver plates as giving great strength to the union thus effected.

## THE TREATMENT OF FRACTURED PATELLA\*

CARL S. OAKMAN, M. D.  
Detroit.

It would be impossible to present any really new features in the treatment of fractures of the patella, but there are certain points which can be reiterated to advantage, because they have not been appreciated so widely as they ought. The adoption of any one procedure for all cases is always unwise, no matter what the surgeon is dealing with. And so in this injury, he who invariably wires the fragments is liable to disappointment as well as he who invariably uses nothing but splints. In brief, every case must be regarded on its own merits and good judgment is the keynote of success.

There are two major divisions of the methods of treatment: first, non-operative; second, operative. The non-operative means will include fixation by splints of wood, binder's board, metal, or plaster of paris. Operative means will include only one procedure—exposing the knee joint and suturing together the fragments in one way or another. The details of accomplishing this are quite varied. Fixation by clamps, pins, or any agent that is partly in the tissues and partly outside, is mentioned only to be condemned as uncertain, unclean, and unsurgical. Subcutaneous suture without incision has

been practiced, but this likewise is uncertain and nearly as dangerous as open operation.

Comparison of operative and non-operative measures has resulted (according to the statistics of Quinby, Martin and Thomas) in showing the former to advantage, yet statistics are hardly necessary, for every surgeon knows that a larger proportion of sutured patellæ give perfect or good function than of those treated conservatively. But in any long series of operated cases we find occasional grim reminders, such as ankylosis, amputation, or death from sepsis. This is the one great deterrent and this is why open fixation cannot be universally recommended. On the other hand, if we should for this reason confine ourselves to conservative treatment there would be, as figures show, few perfect results, and many poor ones, which in hundreds of cases means for working people a diminished earning capacity, an impaired gait, and life-long annoyance. The explanation of the uncertain outcome in non-operated fractures lies in the fact that the fragments unite by fibrous tissue and seldom by bony union. This in turn is explained by the interposition of torn edges of aponeurosis between the fragments. Such is the usual condition, as proved by operation.

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In choosing the method of treatment I should lay emphasis first of all on one dictum: Never operate unless under circumstances that are absolutely ideal for asepsis. Next, do not operate if the patient is aged—say over sixty, for a working basis—or if in poor health. These, I believe, are the chief contraindications, and if none of them exists, then operation may be considered. It is claimed by some that open fixation should be limited to cases with wide diastasis of the fragments or with great joint distension. But we must remember that fragments that lie close together are just as liable to have aponeurosis interposed and result in fibrous union as are those widely separated. In joint distension we have a sign that is important, for it signifies rupture of the capsule. As a matter of fact it is known now that these ruptures occur in the majority of patellar fractures, allowing free escape of fluid, blood, and secondary exudate into the surrounding tissues. Operative repair is the only way of assuring the original integrity of the capsule. It is now a routine procedure in many large hospitals to suture all fractured patellæ except in old or unhealthy patients, and I believe the practice is steadily increasing. Although eight years ago the operation showed a mortality of 1.4 per cent in 711 cases collected by Powers, yet it is undoubted that the mortality of a series compiled in the last five years would be less than one-half per cent. I have never seen a case result in sepsis. Nevertheless, the wisdom of this routine is not as yet universally admitted and it is probable that each case should be considered carefully before advising operation.

If it is decided not to operate, what

means are to be used for fixation? I am used to relying on the posterior wire splint—indeed, I use it likewise after operation, and I believe nothing is so good. It requires, however, considerable practice to get the most out of it. The advantages are lightness, comfort, cleanliness, easy access to injury. By the proper application of adhesive plaster the fragments of the broken patella can in nearly all instances be very closely approximated. For about two weeks a case should be watched carefully, the strapping and bandaging readjusted according to the increase or decrease of swelling, and massage begun as early as desired. Early massage (i. e., in the first week) should be very carefully done and only by an expert. At the end of two weeks conditions will usually allow the application of an ambulatory splint, for which plaster of paris is the most generally useful. This should extend from toes to groin and should be split on both sides so as to allow daily removal, and the use of hot water, massage and passive motion. The last should be increased daily little by little. Hot water is a very useful agent and should be applied on a heavy material, like a bath towel, entirely enveloping the knee, and hot as can be borne, for fifteen minutes, much in the manner that the barber uses hot towels on the face. The massage and passive motion should immediately follow this. As soon as the plaster splint is applied the patient should begin to use crutches. Cases treated in this way require many weeks for repair, and a strong knee is gained only in six to twelve months.

As to operations, there is one detail that is not sufficiently appreciated, i. e., that non-absorbable suture is rarely ne-

cessary, and that the suture does not need to be passed through the fragments of bone. Chromic catgut applied to capsule and aponeurosis or tendon is all-sufficient. This has been practiced and used by a few men for several years, but a great many men still cling to silver wire or drilling the bone. Wire suture in a certain proportion of cases causes irritation sooner or later and not seldom causes suppuration. It is an unwise place for wire, on account of the constant motion of the knee joint. As for perforating the bone, it takes time, liberates bone dust, which is hard to clean away, and often lends no additional security. The fact is, that if the fragments are brought together as they perfectly well can be by suture of soft parts, in two weeks' time their union is as firm as if held by catgut passed through the fragments. The best time to operate is soon after the fracture—any time within six days. Certain surgeons advise waiting nearer ten days, but this allows considerable organization of blood clot and it loses time to the patient.

The incision that shall be used is much disputed—transverse, longitudinal, curved, with convexity up or down. The curved incision with convexity down affords extensive view of the field, skin infection is less likely to extend to site of fracture and the scar is less conspicuous and less liable to irritation. I prefer it. Irrigation of the joint is not so much practiced as formerly; blood is removed gently by sponges and the joint cavity is molested as little as possible. Drainage should seldom be used. The details of operation as described by Blake are applicable to nearly all cases. After operation, I prefer again the posterior wire splint until the wound is united. This usually occurs in a week, and then plaster

is applied and the patient can begin cautiously to use crutches. The cast is split any time thereafter. Massage, hot water and passive motion may be begun in two weeks. The cast should surely be split at the end of the second week after operation, and it may be discarded at the end of the third week. Then a flannel bandage is worn from toes to thigh. Inside of four weeks the patient can begin to bear a little weight on the foot, gradually increasing it. The bandage may be discarded after two weeks, although it can be continued if necessary for comfort, as will often be the case. Fractures treated in this way will more often than not result in strong union; and the patient is often able to resume work in six weeks or even sooner.

The foregoing applies only to fresh closed fractures. In compound fractures there is hardly any choice but to operate. Also in old fractures with poor results, due to wide separation of fragments, the treatment is operation, and in these cases it will often be found necessary to use metal wire because the tension is so great.

For measuring the flexion in a convalescent case I have made use of a heavy lead wire, which is moulded to the contour of the knee over the patella, and then traced on paper. In this manner the increase of motion can be seen from day to day.

In conclusion, I would repeat that operation should never be considered under any but ideal conditions, nor in sick or aged patients. In operating recent cases, use absorbable sutures applied to the soft parts. For fixation use first the wire splint and then plaster of paris. And if you advise operation, never fail to state honestly to the patient the risk as well as the advantage.

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## SOME OBSERVATIONS ON RHEUMATISM AND ITS TREATMENT WITH THE MINERAL BATHS OF MT. CLEMENS—

### REPORT OF CASES

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RICHARD LEUSCHNER, M. D.

Mt. Clemens.

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During a lengthy professional activity as bath physician at Mt. Clemens, covering a period of fifteen years, I have had occasion to secure and classify considerable clinical material regarding rheumatism in its various phases and manifestations. I feel that the observations and experience gathered during this time, and herewith briefly presented, should be of interest to those physicians not already familiar with our baths. If, in presenting this clinical evidence, the claim is made that in the treatment of rheumatic affections the water of no other known bathing resort excels that of Mt. Clemens in its energetic, speedy and pronounced action and effect, we may trust and reasonably assume that our contentions on this point are not without foundation.

Briefly described, our mineral baths are powerful, iodo-bromo-sulpho-salines obtained from wells averaging a depth of 1,200 feet, having a specific gravity of 1.116; a mean temperature of 56 Fahrenheit. One hundred and twenty-five pounds of aggregate minerals are contained in each bath of about 65 gallons. The water is heated to a suitable degree ready for immediate use in the bath houses. The accompanying analysis, exe-

cuted by John Meyer, chemist, Mt. Clemens, shows physical character and chemical composition of the water.

It is a matter of record that the majority of visitors frequenting our baths are patients suffering from rheumatism in some form, and partly for this reason my observations and researches were directed more to the study of this disease; at the same time splendid opportunities are always afforded and clinical material constantly available for watching and observing the various manifestations and progress of this disease during a bath cure. In compiling my notes for this paper, owing to space, I sought to confine myself mostly to the report of cases with little reference to pathology and etiology, separating and mentioning only the two larger groups, articular and muscular rheumatism, and reserving the discussion and bath treatment of rheumatic arthritis, arthritis deformans, sciatica, and other painful manifestations resembling rheumatism for some future date.

That articular rheumatism is the product of a disturbed metabolism in consequence of an auto-intoxication resulting from constant malassimilation due to the functional derangement of one or more

parts of the digestive tract plus an infection, attributable to some specific micro-organism, possibly a diplococcus not character; etiologically, nevertheless, quite a difference exists between the two types, inasmuch as in muscular rheuma-

### PHYSICAL CHARACTER

TEMPERATURE..13.61° C.. or 56.5° Fahr.
REACTION..... Faint Alkaline.
SPECIFIC GRAVITY.....1.116.

Chemical Constituents	GRAMMES IN 1000 CCM., or 1 LITRE.	GRAINS IN ONE U. S. GAL.	GRAINS IN ONE IMPERIAL GAL.
HYDROGEN SULPHIDE	0.14620	8.53961	10.26071
HYDROGEN SELENIDE	0.00018	0.01047	0.01263
HYDROGEN TELLURIDE	0.00027	0.01574	0.01898
CARBONIC ACID, <i>free</i>	0.14878	8.69022	10.43172
CARBONIC ACID, <i>half combined</i>	0.03185	1.86033	2.23316
CALCIUM CARBONATE	0.06568	3.83609	4.60675
MAGNESIUM CARBONATE	0.00061	0.03557	0.04266
FERROUS CARBONATE	0.00596	0.34810	0.41784
COBALTOUS CARBONATE	0.00112	0.06530	0.07839
CALCIUM SULPHATE	1.55960	91.09819	109.35237
CALCIUM HYPOSULPHITE	0.13461	7.86260	9.43821
SODIUM SULPHITE	0.69579	40.64125	48.78549
SODIUM SELENITE	0.00533	0.31122	0.37371
SODIUM TELLURITE	0.00574	0.33529	0.40241
SODIUM CHLORIDE	97.81765	5713.65182	6858.64638
POTASSIUM CHLORIDE	7.94225	463.91670	556.88396
LITHIUM CHLORIDE	0.04665	2.72483	3.27081
AMMONIUM CHLORIDE	0.17624	10.29402	12.35717
CALCIUM CHLORIDE	80.10109	4678.80376	5616.42046
MAGNESIUM CHLORIDE	41.20369	2406.75932	2889.06499
MAGNESIUM IODIDE	0.01460	0.85266	1.02363
MAGNESIUM BROMIDE	1.21730	71.10401	85.35296
STRONTIUM SULPHATE	0.01300	0.75916	0.91130
SODIUM BIBORATE	0.03790	2.21372	2.65739
ALUMINUM CHLORIDE	0.02975	1.73764	2.08594
SODIUM SILICATE	0.01457	0.85096	1.02147
SULPHUR, <i>in suspension</i>	0.00712	0.41584	0.49916
FERROUS SULPHIDE, <i>in suspension</i>	0.00621	0.36261	0.43543
RUBIDIUM	Trace	Trace	Trace
CÆSIUM	Trace	Trace	Trace
<b>TOTAL</b>	<b>231.42974</b>	<b>13518.09703</b>	<b>16227.08698</b>

positively isolated, seems no longer an argument. In the muscular form we also cannot absolutely deny its infectious tism the climatic influences are held to be largely responsible and to be an important contributory cause for the onset

of the disease. Experience has called my attention to the fact that articular rheumatism may originate and develop entirely independently of any change of temperature in which the patient has dwelled and lived, while, in muscular rheumatism, a sudden refrigeration of the body surface is regarded as an important factor. For this reason we notice more the involvement of the broader muscles of the back, chest and shoulders, than the narrow muscles of the fore-arm. Both categories of rheumatism we may divide into acute and chronic and the difference between them, as in all infectious diseases, can be briefly characterized in the following manner: In the acute stages of illness we are always dealing with a rapid development of the germ of disease in the organism, and if the system shows sufficient reaction to withstand the invasion and is otherwise amply strong, the same rapid development of the disease germ will be arrested and the latter eventually collapse. On the other hand, a low resistance will permit speedy disturbance of function of the vital organs, frequently the heart, and the disease often ends in dissolution. In the chronic form of disease the relation between the cause of illness and vitality of the organs is entirely different. Inasmuch as they are approximately in a state of equilibrium, it is generally assumed that other factors acting on the organism control the favorable or unfavorable course of the disease.

We find in acute rheumatic manifestations that the application of the mineral bath alone will not always sufficiently elevate the power of resistance of the patient without the aid of suitable specifically acting medicine. Moreover,

it seems to be a matter of fact that the combined effect of medicines and diet is materially strengthened and becomes more effectual with the assistance of the additional mineral bath. In chronic troubles the conditions are somewhat different. We are not expecting speedy results, but are satisfied with a gradual strengthening of the patient's resisting power. In these cases internal medication is generally unnecessary, the direct beneficial action of the mineral bath becoming more apparent and in this wise actually proven. To sustain these contentions the following cases will be of interest:

#### Case I.—Chronic Articular Rheumatism.

Mr. B. B., of Cincinnati, began treatment in May, 1896. Patient is a bachelor, aged 55. Original weight 155 pounds; weight on arrival 101 pounds. From boyhood inclined to biliousness, headache and constipation; always a quick worker, fast eater and heavy smoker. Was first taken ill with rheumatism in 1886. Since then had recurring attacks two or three times a year, the same gradually developing into a complete uselessness of nearly all the joints. No gonorrheal history. On examination, he presented a pinched face of muddy complexion; eyeballs yellow; thickly coated tongue; meta-carpo-phalangeal joints thickened and swollen; feet and ankle joints show analogous deformities; interossei of the back of hands atrophied; knees and elbows much enlarged; movements of shoulders and hip joints much impaired; most joints partially ankylosed; extreme atrophy of muscles of the thighs, calves, and arms. When assisted, patient is able to stand but is unable to walk. Heart is sound, liver enlarged. Urine scanty, high colored; some albumin. He has constipation, anorexia and flatulency. The patient reminds one of the living skeleton and ossified man of museum fame. After three months of bathing with intervals of rest aided by active elimination, diet, fresh air, sunshine, etc., marked improvement was accomplished. With the gradual return of function of the disturbed organs the metabolism was slowly being restored, joints and muscles resuming normal action and strength. He remained about six months, alternately resting and taking the baths. His health was excellent and he could take daily walks of from one to five miles without any discomfort. Present

weight 143 pounds. The only visible sign left to show the remnants of severe rheumatism are the deformities in the meta-carpo-phalangeal joints. Mr. B. B. has been coming every year for four weeks of rest and bathing. In this case the powerful alterative and lymphagogic action of the baths is especially exemplified.

#### Case 2.—Acute Articular Rheumatism.

Mr. F. G., of Chicago, took ill with acute articular rheumatism about the middle of April, 1896, involving both ankle joints, right knee joint and right elbow joint. After five weeks treatment at home patient was sent to Mt. Clemens to get further relief from some stiffness that was still manifest in one elbow joint. During the trip he was suddenly attacked with renewed pains in the right elbow joint. Temperature rose to 103°, pains were felt in both elbow joints, both wrists and later also in both ankles. In spite of antipyretics, etc., temperature could not be reduced. After the third day, temperature gradually diminished to 99°, but continued pains and swelling of all the joints was a matter of much discomfort. Patient was given a bath the next day at a temperature of 98°, of fifteen minutes duration. No massage allowed. Temperature next day normal. Patient enjoyed six hours of comfortable sleep. Baths were continued daily after this except Sundays, and antipyretics were discontinued after the third bath. Pains and swellings in the joints gradually disappeared, and after the fourteenth bath patient was able to be about the lobby of the hotel. At the end of four weeks in which the patient received 23 baths, recovery was accomplished. In this case the combined effect of medicine, diet, and baths resulted in a complete cure which seemed impossible with the use of drugs alone.

#### Case 3.—Chronic Articular Rheumatism.

Mr. F., of New York, lived and conducted a farm for years in South Carolina. His house was situated on an elevation, while most of the land was located in a moist and deep hollow. In the evenings the atmosphere surrounding his residence would generally begin to become impregnated with the dense fog arising from this miasmatic region. Six years prior to his first visit to Mt. Clemens, Mr. F. was able to ride horseback for hours and walk miles without any discomfort, but as the years rolled by it became more difficult. He would of necessity complain of painful swellings of the different joints, which would yield, with proper treatment, very readily

at first, but later they were more difficult to overcome. The paroxysms would be of shorter duration, and upon his arrival, June, 1901, here in Mt. Clemens, he presented the characteristic rheumatic joints, involving especially both shoulders, knees, elbows and ankles. The joints were partially ankylosed and very painful when movement was attempted. Patient received his daily bath coupled with the necessary dietetic, hygienic and therapeutic measures in order to regulate the disturbed metabolism, and at the end of three weeks was able to attend to himself. In the fourth week of his sojourn he ventured (without my consent) a visit to Detroit, only to receive a setback sustained from the exertion. This, however, was again overcome, and at the end of six weeks he was dismissed as having conquered the malady. He visits Mt. Clemens once a year for a course of baths for "safety sake," as he expresses it. He has had no discomforts since his first visit.

#### Case 4.—Chronic Muscular Rheumatism, Presenting Torticollis, Vaginismus and Rectal-Constriction.

In the fall of 1897, Mrs. A., of New Orleans, presented herself for treatment. Patient had been married, but had never been pregnant. In the month of April, 1887, at the age of 45, during menstruation, her nervous system sustained a severe shock on the occasion of a fire which destroyed her home. The menstrual flow continued incessantly until the latter part of June of the same year when it stopped suddenly, never to return again. Patient has always been anemic, of a nervous, irritable temperament, subject to irregular menstruation, leucorrhea, headache, constipation, occasional pains in shoulder, back and chest, but has never been seriously ill or injured. Shortly after the cessation of the menses she was attacked with spasms of the muscles of the neck and face. Gradually the head became drawn to the left, the chin elevated and the ear nearly resting on the shoulder. At the same time the patient noticed a gradual constriction of the rectal sphincters, and vagina, with incidental pains in the muscles of the leg. As the time rolled by, her physical and mental condition assumed a more serious aspect, necessitating her commitment to bed under the care of nurses. Patient stated that she only left her home four times in eight years to go to Hot Springs for treatment. Patient received the customary bath treatment in conjunction with the necessary auxiliaries. An uninterrupted recovery was accomplished at the end of two months. The sterno-cleido-mastoid muscles



which were very much wasted, resumed their normal condition, the torticollis, vaginismus and rectal constriction disappearing. When patient left for home she could carry her head erect without being obliged to use her left hand as support, which she was compelled to do for ten years.

#### Case 5.—Acute Muscular Rheumatism.

Miss C., of Buffalo, who accompanied her sick mother to Mt. Clemens, was caught in a severe rain and thunder storm and was drenched to the skin. It was impossible for her to change her clothes until three or four hours afterwards. The following morning the young lady complained of severe pains in both shoulders and muscles of the back. There was no rise in temperature. A bath at 98° was advised. During the bath and for three hours afterwards the patient felt perfectly well, only to be annoyed by more severe pains in the same region. Counterirritants and internal medications were employed with some degree of success, the patient passing a restless night. The following morning, pains were still causing suffering to the patient. Another bath was ordered, the same treatment resumed and the night passed with very little discomfort. Baths were kept up daily for three weeks and the cure ended in an uninterrupted recovery. The peculiar feature of this case was the fact that the patient's cousin who accompanied her during her walk, was also drenched to the skin, and she seemingly showed a decided weaker constitution than the patient, but escaped without the least molestation. The inference would be that metabolic disturbances in the muscular structures of the patient were already manifest prior to the drenching, the sudden refrigeration favoring its further development; whereas, owing to a more normal state, the cousin escaped any annoying consequences. As in case No. 2, the baths and auxiliaries were instrumental in the successful termination.

#### Case 6.—Chronic Muscular Rheumatism.

Mr. T. P., of Pittsburgh, a brewer by occupation, on account of his vocation was for years exposed to the temperature of the hot brew-house and the ice-cellars; as well as to the climatic influences and changes in Pittsburgh, while driving a beer wagon. Patient is a large, powerful man, carrying considerable adipose tissue. In spite of the exposure and a great many other detrimental influences, his health during his fifteen years of active work was fairly good. Three years ago patient retired from active work. However, the superintending of his brewery kept him in con-

tact with the changes of temperature of his ice and brew-house. Patient must have had rheumatic tendencies for years, but owing to the active muscular exercise in former years resulting in the furtherance of the metabolism, they never presented themselves. Without the active work, and the combined obnoxious influences still prevailing, the appearance of an extensive muscular rheumatism would manifest itself very often; the same, however, would always disappear with suitable application of medicine, diet and massage, but would always re-appear on the least change of temperature, until at last the whole muscular structure of the back and chest became involved. Under the proper application of the baths, coupled with mild massage, with special attention to a frugal, abstemious mixed diet in conformity with our bathing methods, the patient, after four weeks of treatment, left for home perfectly relieved of his ailment. Three years have passed and Mr. T. P. has had no return.

In all these typical cases, the results of the baths are apparent. What the success is based upon, or what chemico-physiologic and physical action mineral waters have upon the normal and abnormal human system has been for a long time a matter of discussion. Only recently in a former article of mine on the physiologic action and effect of the mineral waters of Mt. Clemens, I conclusively proved the ingress of our mineral baths into the system through the skin, and consequently their correct action on the organism. Prominent physiologists and clinicians, as Wittich, Gutman, Wolkenstein and others, contended long ago that salt and alcohol solutions were absorbed through the skin. Without any suggestion on my part, patients would tell me of a peculiar salty taste in their mouths experienced after a bath. It was possible at first, however, to assume that, the gustatory nerves were stimulated by the inhalation of small particles of evaporated bath water; but, the actual finding and isolation of iodine and bromine in the urine of healthy bathers,

specially selected and watched, and who were on a strict dietary and hygienic regime during the time of the experiments, proved beyond a doubt the absorption of the mineral water through the skin during the bath. It appears also that the powerful concentration of our baths, exerting a marked stimulus to the skin, allows easier ingress of the water through the same. These findings and facts would naturally lead us to the conclusion, that

the external stimulus and the ingress of the water through the skin into the deeper circulation and lymphatics must exert a decided influence upon the metabolic changes; and, if this can be accepted as true, we are dealing with powerful balneologic alteratives and lymphagogues, their chemical composition and physical character being beneficial and especially adapted to the treatment of rheumatism.

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A skin-lined sinus opening between the coccyx and the anus, when not very short, usually leads to a dermoid cyst situated close to the coccyx. Frequently loose hairs from the dermoid may be found in the sinus.

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Localized, indurated or softening skin infections ("boils") often disappear completely or open painlessly under an application of emplastrum plumbi in which is incorporated 10% of salicylic acid, or of 10%-20% salicylated soap plaster. After the boil opens the tiny dressing should be changed every two or three hours.

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Indolent sinuses, as of the fingers after deep infections, frequently heal by the daily use of prolonged immersions in hot water.

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Intravenous saline infusions in too large volume are harmful by the production of congestion of the internal viscera. One to one and a half pints are enough for an adult of average weight.

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Catgut strands do not make a good drain for wounds; they tend to swell and occlude.

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Silkworm-gut is easily dyed, and incidentally impregnated with an antiseptic, by immersing it for 24 hours in 1% solution of methyl violet, before the boiling.

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Stains of aniline dyes may be removed from the fingers with strong hydrochloric acid, stains of iodine with aqua ammonia, and stains by silver nitrate with potassium iodide solution.

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When clamping a vein in continuity secure the proximal end first; otherwise it will empty and may become lost to view.

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Patients will appreciate the use of black bandages for the scalp—where they are comparatively inconspicuous, and for the hands—where they do not soil.

## The Journal of the Michigan State Medical Society

All communications relative to exchanges, books for review, manuscripts, advertising and subscriptions should be addressed to Editor B. R. Schenck, 502 Washington Arcade, Detroit, Mich.

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OCTOBER

### Editorial

#### Laboratory versus Clinical Diagnosis

is a theme about which much has been written. It has often been assumed, as is indicated by the title, that there is a certain antagonism between the laboratory worker and the clinician; that, in a sense, they are pitted against one another in their endeavors to elucidate disease; that they are racing to reach the same goal by different paths—paths which run through entirely different fields. This spirit of rivalry is but natural when one considers that clinical laboratory methods are of very recent date and seemed for a time likely to detract from methods of physical examination long in vogue.

It is also natural that much is expected of these chemic and microscopic methods which is not fulfilled. When these disappointments are realized the clinician has his innings and he usually makes the most of the failures encountered by his brother of the laboratory.

That the value of new methods is at first always overestimated, history amply illustrates. Examples have been as numerous in clinical as in laboratory work. When Piorry introduced the use of the plexometer in percussion, he held that every organ in the body had its own char-

acteristic note. Long and strenuous was the controversy over this until Skoda, in 1839, showed that it was false. Similar contentions were made for the binaural stethoscope. The early history of bacteriology teems with controversies between the hospital ward and the laboratory, and they are still distinctly to be heard. The introduction of methods for blood examination furnishes many interesting polemics. More recently, the Roentgen rays have been exploited as unfailing and how great has been the disappointment! Radium, too, has had its fling and is now relegated to the important but not all-important place where it belongs. We may expect the same rise and fall in the quotations on opsonic therapy.

But all this of course does not mean that one and all of these methods are without value. On the contrary, each and every one has no value because invaluable. It only shows that the natural over-enthusiasm which at first is predominant, begets controversies and misunderstandings, sometimes years in dying.

Not infrequently in our medical meetings, one hears a strong emphasis on this **versus**, and it is difficult to convince some that there is not and never has been any antagonism between the man who percusses and auscults and him who works with the test tube and the cover glass. There is no royal road to diagnosis. The laboratory man no more claims to diagnose pneumonia or appendicitis by a blood count than the clinician by percussion or auscultation alone. As Dr. Sill says in the leading article of this issue: "Just as there are few pathognomic signs and symptoms, so there are few diag-

nostic laboratory examinations." In many instances, laboratory findings form but another link in the chain of evidence, either pro or con, in some instances an invaluable link, in others a less important one. Doctor Sill's plea for a closer cooperation between clinician and laboratory worker should be carefully read. It contains some thoughts worth pondering.



**The influence of the laboratory upon practical medicine** has been profound. Indeed one may almost say that the sole difference between the old-time and modern medicine is that the scientific methods of the laboratory have been introduced at the bed side of the patient. In this connection it is interesting to trace out the development of the scientific laboratory, as has been done by Welch,\* for the clinical laboratory is the natural outgrowth of those devoted to chemistry, physics, physiology and pathology.

It is generally stated that the first public scientific laboratory was that of chemistry, established in Giessen, by Liebig, in 1825. Welch, however, points out that this was antedated one year by the physiological laboratory, founded by Purkinje, in Breslau. Purkinje, whose name is familiar to us all from the corpuscles first described by him, held the first chair of physiology in Germany, established in Breslau, in 1828. One year later he opened his laboratory.

The first independent laboratory for physiological chemistry was that opened in 1872 by Hoppe-Seyler, in Strassburg.

In 1845, Thompson, later Lord Kelvin, opened a "laboratory" for the study of physics. This was in connection with the University of Glasgow and occupied an old wine cellar, which, "with the bins swept away and a water supply and sink added, served as a physical laboratory for several years."

The first pathological institute owed its being to the genius of Virchow and was opened in Berlin in 1856. Like all of the work done by Virchow, the foundation of the laboratory was on broad lines, opportunities being given for reasearch in pathologic anatomy, experimental pathology and physiologic and pathologic chemistry.

Hygiene first found a home of its own in 1878, when Pettenkofer opened to students the Hygienisches Institut in Munich. Such a laboratory appeals perhaps the most strongly to legislators and the general public, for the results of work along hygienic lines naturally seems to the laity of the most practical importance.

These various laboratories were the prototype of those more recently established, for the study of clinical methods, the latter work-rooms being necessary because modern diagnosis demands knowledge of and skill in the use of various physic, chemic and microscopic procedures. von Ziemssen, in 1884, first put this idea into practical form by establishing in connection with his clinic in Munich, a clinical laboratory containing departments for physics, chemistry, bacteriology, and microscopy. Curschmann, in Leipzig, did likewise in 1892.

In America, the pioneer institution of this kind, housed in its own building, is The William Pepper Laboratory of Clinical Medicine opened at the University of

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The Evolution of Modern Scientific Laboratories.  
*Johns Hopkins Hospital Bulletin*, January, 1896.



Pennsylvania in December, 1894, although similar advantages on a lesser scale could be obtained somewhat earlier at several American universities.

Such laboratories as those of von Ziemssen and Curschmann and those of our own institutions are conducted in close affiliation with the clinical work. There is the closest possible contact between the laboratory man and the clinician. The former can never supplant the latter; indeed, as Emerson, the author of the most recent work on clinical diagnosis, puts it in quoting a former teacher of his: "The clinical chemist must be first a good clinician and second a chemist; he should remember that even from the laboratory point of view his stethoscope is of more importance than his microscope, his percussion finger than his whole outfit of chemical apparatus."



**The value of the county society** was the theme of a symposium of four papers excellently carried out at the first meeting of the Wayne County Society for the year. It is well for an organization to now and then spend an evening introspectively—to go over the object and motives of its being, to examine the causes of its failures, to find out wherein it has been lax and to agree on methods of work for the future. These papers are published in full in this issue and will repay careful reading.

The benefits of organization have been so amply proven that a discussion of them seems almost superfluous. The mere enumeration of these benefits would fill several pages. Certain points, however, in these papers will bear emphasis.

Doctor Connor brings out the point that the county society should consist of all the profession in the county. It is not, and should not be considered, in any sense, a medical club. For the older practitioner it serves as a "crucible for separating the gold from the dross in his stock of knowledge." In the society, the older practitioner can do much in teaching and helping the younger men. By no means the least of its benefits is to keep the older man in touch with the new comers, thus keeping him from growing old too rapidly.

Doctor Davis believes that the society is of more value to the younger than to the older members, for it is the formative period of the younger worker, and if surrounded by the proper environment, his ideals will be the higher and his development correspondingly great. There are many subjects, not distinctly clinical, which the younger man can develop and present even better than his elders, for he has the time to make the necessary researches. As a training school in the art of writing and speaking, the county society has no equal.

Doctor Kiefer's paper discusses the relation of the Wayne County Society to local affairs, but there is hardly a county in the state to which the points he makes are not applicable. The molding of public opinion on many of the important questions of the day is not the least important function subserved by medical organization.

Among the things done by the county society for the profession which are brought out by Doctor Tibbals, are the provision of means of acquaintanceship, the maintenance of a standard of excel-

lence, the establishment of high standards of education, the defeat of quackery and the promotion of that harmony which makes possible the application of the Golden Rule.

Everyone who listened to these short papers carried something away with him, and in order that many others throughout the state may enjoy and profit by them, they are printed in full.



**Of Alcohol as a fuel,** great things are expected. The recent action of Congress which makes denatured alcohol free of internal taxes will probably result in the more or less universal substitution of alcohol for gasoline. All kinds of vegetable waste, such as the refuse from sugar cane and sugar beet, can be employed in the manufacture of alcohol, and it only remains for a cheap process of denaturation to be discovered to bring the cost of such alcohol down to a figure which will make its use eminently practical.

At present either methyl alcohol, costing considerably more than tax free ethyl alcohol, or pyridine is used for denaturation. The latter is expensive and has a very disagreeable odor. Even should no cheaper agent be found than wood alcohol, there is still a fair margin in favor of alcohol, provided it is manufactured on a large scale.

It will be used in explosion engines the same as gasoline. As to its efficiency, authorities differ, but in the opinion of one well known authority, the saving will be some twenty per cent. The gain is due to the fact that alcohol can be compressed, without auto-ignition, to a greater extent than can gasoline and the power

derived from its expansion is therefore greater. It will also be safer because of the lower "flashing point" as compared with any petroleum derivative.

As a fuel its advantages are more familiar. It burns with a pale blue flame with no soot and little radiated heat. The latter fact makes its use comparatively free from danger as objects near the flame rarely become overheated. In case of accident, the burning alcohol can be extinguished with water, for it mixes freely with water, while gasoline merely floats on it. Moreover, alcohol has little odor, while that of gasoline is most disagreeable.



**A new State Medical Journal.** We welcome into the fold of medical journals owned by the state societies, the "*West Virginia Medical Journal*," which has just made its bow. It is published by the state society and for the present will be issued bi-monthly.

The first number is in magazine form and contains 50 pages of interesting reading matter. It is well edited and neatly printed and bespeaks great things for the future. Prosit!



Eczema of the umbilicus is sometimes merely the expression of an infected dermoid cyst at that site.

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Persistent pain in an arm may be due to the presence of a "cervical rib."

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Vomiting may frequently be controlled by one drop doses of tincture of iodine in water at half-hourly intervals.

## Book Notices

**Prophylaxis and Treatment of Internal Diseases.**—By Frederick Forchheimer, M. D., Professor of Theory and Practice of Medicine and Clinical Medicine, University of Cincinnati. Octavo, 652 pages. New York: D. Appleton & Co. 1906.

This work of Forchheimer, as its title indicates, is devoted to a discussion of the prevention and treatment of internal diseases. Etiology, pathology and diagnosis are not considered, the book therefore not being in any sense a "practice" of medicine. The author writes in a clear and concise style, a style which impresses one with the fact that the writer is not compiling but rather stating the results of experience. A perusal of the pages would seem to bear out the statement in the preface that it "is a compilation in so far only as it deals with the prophylaxis and treatment of tropical diseases" in which the author's experience has been lacking.

In all, 112 diseases are discussed. It is impossible to give an adequate review of the whole, but the scope of the work may be judged from the manner in which typhoid fever is discussed. Under prophylaxis the author considers (1) Sources of infection: (a) water, (b) milk, (c) other foods, (d) patient himself. (2) Disinfection. (3) Individual prophylaxis. The vaccine prophylactic treatment is fully discussed. Under treatment, (1) specific treatment, (2) abortive treatment, (3) antiseptic treatment, (4) symptomatic treatment, (5) antipyretic treatment, (6) routine treatment. Diet is fully discussed. The abnormal forms and complications are then considered. The section ends with valuable advice concerning the management of convalescence.

The same thoroughness is noticed in all the sections reviewed.

Throughout, special emphasis is laid on methods which are applicable to private practice. Hydrotherapy, gymnastics, exercises and diet have been given a prominent place.

The work is uniform with many of the Appleton works, and leaves nothing to be desired in print, paper or binding.

**Clinical Bacteriology and Hematology for Practitioners.**—By W. D. Este Emery, M. D., B. Sc., Lond. Being the Second Edition of "A Handbook of Bacteriological Diagnosis for Practitioners." 8 mo.; 240 p. With 46 figures and 10 plates. Philadelphia: P. Blakiston's Son & Co. 1906. Price, \$2.00 net.

One of the best guides for practical work in bacteriology and hematology which we have seen

in this book of Emery. The first edition met with considerable favor and this second edition has been much improved. While the work is not as exhaustive as many others, it contains very clear and concise descriptions of the technic of the more commonly used tests. The tests recommended are those which may be used in the course of a busy practice by any one who has learned the rudiments of laboratory diagnosis.

The newer subjects such as the spirochete pallida and Wright's method of testing the opsonic index have been included.

The valuable feature of the work is that the author tells when and why to employ a test and teaches, as well as can be done on paper, what the absolute and relative values of the laboratory findings are. For this reason it is a most excellent work for the clinician.

The book is well illustrated and is a reliable guide for the subjects covered.

**A Compend of Operative Gynecology.**—Based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School and Hospital. By W. S. Bainbridge, M. D., Adjunct Professor, and H. D. Meeker, Instructor, New York Post Graduate School and Hospital. 12mo cloth, 76 pages. Price \$1.00 net. The Grafton Press, Publishers, New York City.

This book contains precise and systematic directions for performing all of the more common gynecologic operations.

Primarily intended as a guide for those who take the author's course on the cadaver, it is nevertheless an excellent little book to have for reference. Its teaching is in accordance with the work of the best men of the day and may therefore be safely followed.

**A Non-Surgical Treatise on Diagnosis of the Prostate Gland and Adnexa.**—By George W. Overall, A. B., M. D. 12 mo., 228 pages, 26 illustrations. Rowe Publishing Co., Chicago. 1906.

The author has taken advantage of a new edition (third) to correct minor errors and revise certain portions of the text which were not clear in the former editions. The anatomy of the parts is briefly considered and then the author's methods of treating acute and chronic prostatitis, senile hypertrophy, tuberculosis and syphilis of the prostate, and its neuroses are given. Considerable attention is given to electro-physics. Throughout, the author elucidates the points by illustrative cases.

**Saunders New Books.** Messrs. W. B. Saunders Company announce for publication in the early fall the following excellent and practical works:

Keen's Surgery, Its Principles and Practice (Volume I).

Sobotta and McMurrich's Human Anatomy (Volume III).

Webster's Text-book of Gynecology.

Hill's Histology and Organography.

McConnell's Pathology.

Morrow's Immediate Care of the Injured.

Stevenson's Photoscopy (Retinoscopy and Skiascopy).

Prieswerk and Warren's Atlas of Dentistry.

Goepp's State Board Questions and Answers.

Lusk's Elements of Nutrition.

The most notable announcement is the new work on Surgery, edited by Dr. W. W. Keen, complete in five octavo volumes, and containing over 1,500 original illustrations. The entire work is written by the leaders of modern surgery—men whose names are inseparably associated with the subjects upon which they have written.

#### Books Received.

**Clinical Diagnosis.** A Text-Book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers and Practitioners of Medicine. By Charles Phillips Emerson, A. B., M. D., Resident Physician, the Johns Hopkins Hospital, Associate in Medicine, the Johns Hopkins University. Octavo, 641 pages, illustrated. Philadelphia: J. B. Lippincott Company, 1906. (Notice next month.)

**Philadelphia Hospital Reports.** Edited by Herman B. Allyn, M. D.

**Tigerstedt's Text-Book of Physiology.** Edited by John R. Murlin, A. M., Ph. D., Assistant Professor of Physiology in the University and Bellevue Medical College. Octavo, 751 pages, illustrated. New York: D. Appleton & Company, 1906. (Review next month.)

#### County Society News.

*To the Journal's Readers and Especially to County Secretaries:*

The Publication Committee desires to make the JOURNAL the medical newspaper of the state. We

should have more complete news of what the county societies are doing. We should have more abstracts of papers and discussions. We should have at least two pages monthly of "Michigan Personals" and "Medical News." Some county societies have been quite fully reported; others never appear. Every meeting of every society should be reported. The correspondence column is also always open. Interesting case histories are solicited. Copy should reach the editor before the 15th of the month, although insertions can often be made as late as the 25th, when the page proof is made up.

#### UPPER PENINSULA MEDICAL SOCIETY.

The upper Peninsula Medical Society, which comprises the twelfth district of the State Society, held a very successful meeting at Escanaba, August 2nd and 3rd.

The following program was enjoyed:

THURSDAY, AUGUST 2nd.

City Hall, 9:30 a. m.

Introduction.....  
 ..Geo. Bjorkman, Pres. Delta Co. Med. Society  
 Invocation.....Rev. P. B. Ferris  
 Address of Welcome.....Mayor M. Perron  
 President's Address, "The Physician and the Medical Society". Pres. A. I. Lawbaugh, Calumet  
 Menominee County—  
 "Typhoid Fever"....B. T. Phillips, Menominee  
 Delta County—  
 "Report of Fatal Case of Typhoid".....  
 .....Geo. Bjorkman, Gladstone  
 Schoolcraft County—  
 "Summer Diarrhoeas". J. M. Sattler, Manistique

ADJOURNMENT UNTIL 1:30 P. M.

Houghton County—  
 "Report of a Successful Case of Caesarian Section".....C. H. Rodi, Calumet  
 Delta County—  
 "Surgery of the Appendix".....  
 .....A. L. Laing, Rapid River  
 Houghton County—  
 "A Plea for Greater Surgical Interest in Obstetrics".....E. T. Abrams, Dollar Bay  
 Marquette County—  
 "Affections of the Gall Bladder"—A Plea



for a More Thorough Knowledge of a  
Common Disease".....

.....A. W. Hornbogen, Marquette

7:30 a. m. Boat Ride on Little Bay de Noque,  
calling at Cleveland Cliff Co. Furnace, thence  
to Gladstone.

Banquet at Hawarden Inn, 10 p. m.

FRIDAY, AUGUST 3rd, 9 A. M.

Business Meeting.

Menominee County—

"Indications for Enucleation".....

.....C. R. Elwood, Menominee

Delta County—

"Report of Case of Imperforate Anus"

.....J. O. Gross, Escanaba

Automobile and carriage drive about the city,  
taking in the ore docks, ore crusher, wooden-  
ware factory and I. Stephenson Co. plant.

At the business session held on the 3rd it was  
decided to hold the next annual meeting at Me-  
nominee and the following officers were elected:

President, Dr. A. F. Snyder, Escanaba.

First vice president, Dr. B. T. Phillips, Menom-  
inee.

Second vice president, Dr. C. H. Rodi, Calu-  
met.

Secretary, Dr. Robt. A. Walker, Menominee.

A permanent legislative committee was appoint-  
ed, consisting of one member from each county  
society, whose duty it is to urge all matters of  
a legislative nature relative to medical legislation.

The following committee was appointed:

Marquette—G. G. Barnett, Ishpeming.

Houghton—Geo. W. Orr, Lake Linden.

Chippewa—Wesley Townsend, Sault Ste. Marie.

Gogebic—Edw. H. Kelley, Ironwood.

Dickinson—Jos. Crowell, Iron Mountain.

Schoolcraft—J. M. Sattler, Manistique.

Delta—A. F. Snyder, Escanaba.

Menominee—Walter R. Hicks, Menominee.

There were about 50 physicians in attendance.

H. W. LONG, Sec'y.

#### CALHOUN.

The third quarterly meeting of the Calhoun  
County Medical Society was held in Battle Creek,  
Tuesday, Sept. 4, 1906. A good sized audience  
was in attendance. Measures were taken and

committees appointed to make Dr. McCormack's  
October visit to Battle Creek a success. Articles  
of association and new by-laws were adopted and  
the society is now a corporate body.

The program—a symposium on pneumonia—  
was thorough, practical and scientific and pro-  
voked a general discussion.

It was as follows:

**Etiology and Bacteriology**, A. W. Nelson,  
Battle Creek.

**Pathology**, Wilfrid Haughey, Battle Creek.

**Symptoms and Diagnosis**, Geo. C. Hafford,  
Albion.

**Treatment**, A. H. Burleson, Tekonsha.

A. W. Alvord, of Battle Creek, led the dis-  
cussion and was followed by J. H. Kellogg, Chas.  
E. Stewart, A. F. Kingsley and R. M. Gubbins.

The meeting adjourned to Battle Creek, Dec.  
4, 1906, at which time the society will hold its  
annual meeting and banquet, as guests of Dr.  
Kellogg.

A. S. KIMBALL, Sec'y.

#### HOUGHTON.

At the annual meeting of the Houghton County  
Medical Society the following officers were elect-  
ed: President, Dr. C. H. Rodi, Calumet; vice  
president, Dr. W. P. Scott, Houghton; secretary-  
treasurer, Dr. Chas. W. Yarrington, Calumet;  
censor for three years, Dr. W. T. S. Gregg, Calu-  
met.

C. W. YARRINGTON, Sec'y.

#### OTTAWA.

The Ottawa County Society has adopted a  
uniform fee-bill, which has gone into effect and  
which all the doctors of the neighboring country  
have signed, members and non-members, and  
which all say they will stick to. At our next  
annual meeting in October we expect to take in  
several new members.

E. D. KREMERS, Sec'y.

#### WAYNE.

The Medical Section met in the Turkish room  
at the Hotel Cadillac, Monday, September 10,  
1906. In the absence of the chairman, Dr. Car-  
stens presided. The program consisted of a  
symposium on the "Value of the County Medical  
Society." The papers are published in full.

## WHAT VALUE HAS THE COUNTY MEDICAL SOCIETY TO THE OLDER PRACTITIONER.

LEARTUS CONNOR, M. D.

For purposes of this discussion, we shall define the older practitioner as one firmly established, able to earn his living and save a comfortable surplus. He is neither a past or coming practitioner but a present one—the present one. He has graduated from the class of younger practitioners and is a candidate for the oldest one—so is free from both the friskiness of the former and the fixedness of the latter.

It is well for us to agree on what constitutes a County Medical Society.

1. It is not a *medical club*—black balls are no part of the County Society—only the majority voting in open meeting prevents the admission of applicants for membership. In their place medical clubs are of great value, but they are no part of a county medical society.

2. It is not "*a holier than thou society*"—its membership does not claim a past without faults, a spotless present, or a monopoly on all virtues of the future. Such immaculate (in their own esteem) societies have been and still are—since Pharisees linger on the earth.

3. It is a society of the *entire* medical profession in a county. If individuals fail of being reputable, it seeks to place about such the conditions for becoming reputable, and when the process is fairly started, takes them into membership. So long as a single legally qualified physician, within the limits of a County Society, is without its membership, so long the Executive Committee has work undone.

The question now fairly before us is "what value has a county medical society to the older practitioner?"

We shall assume that the type of which we speak, is well educated generally, as well as professionally, that he is fair minded, and seeks to do his best for patients, fellow practitioners and the people, and fails not to keep step with the advance of his calling.

The value to such of his county medical society has many factors varying in importance, to individuals at different periods of life, but time forbids but brief reference to only a few.

First—The county society augments the knowledge of the older practitioner in many directions.

He is quite unable to master the vast field of medicine and surgery. Others study along other lines, read different books, have different experiences, from which at the society meetings they present varied ideas, and make unthought-of practical suggestions. Negatively, incorrect statements, illogical reasonings by fellow members increase knowledge by compelling farther research to remove the awakened doubt. Hence one who has attended county medical society meetings without being conscious of an indebtedness there-to for not an inconsiderable amount of his equipment of practical, proved knowledge, surely fails to keep tab on the source of his stock in trade.

Second—The knowledge which the older practitioner acquires needs trimming, readjusting, condensing, and there is no method more effective than the county society. Let him present the society with papers or specimens, report cases, discuss other papers, specimens or cases, and he will find that his own stock of knowledge is often incomplete, inaccurate or misleading. Thus the county society is a *crucible* for separating the gold from dross in the older practitioner's stock of knowledge. The more isolated his work, the larger his success, the greater his self confidence, the more does he need this refining service of the county society.

Third—Not every doctor has a chance to teach students in a medical college and be advertised by college circulars, advertisements, etc., but the older practitioner can teach the members of the county society, more or less at every meeting and be advertised by its published proceedings and papers. The teaching skill thus acquired is of great value in explaining to patients or their friends, the nature of their ailments and the best methods for giving relief. The ability to think clearly while standing and speak forcefully, is of infinite value, not only in professional gatherings, but those of the laity. From lack of acquiring this ability offered by the county society to every member, not a few fail of doing to others or securing for themselves the best things in a professional career. Too many forget that the M. D. degree means teacher of medicine, as well as practitioner, and neglect to cultivate the teaching power equally with the practicing. Because the majority of the profession teach the laity so little, they give it little confidence and scant courtesy. The great need of our age is doctors who can and will teach the people that which they ought to know relative to their physical existence; teach towns, cities, states and nations how to conduct their affairs so as to be healthful,

strong and prosperous. The county society is a training school for the older practitioner, who really desires to be a teacher of medicine in its truest and noblest sense—by assisting him to think more logically, speak more accurately and write more persuasively.

Fourth—The county society makes it easier for the older physician to obtain a better knowledge of his fellows. These constantly change; some arrive, others depart, all are shifting residence, office, methods of work, habits, personal or professional—each is different from the other, in ways partly open and partly hidden.

With any one of these he is liable to be called into close professional relations. If familiar with the personal equation of each, such relations are more apt to be mutually profitable. Across the street, a physician may appear discreditable but near at hand commands respect. The county society brings the older practitioner so close to every other doctor in his county that he is measurably protected against errors of judgment, when first meeting him at the bedside. All thoughtful persons recognize in the mutual ignorance of doctors, a most fruitful source of local squabbles, that have done so much to discredit the medical profession.

Fifth—The county society furnishes the older practitioner an unrivaled chance to become great by being the *servant* of all members. Standing midway between the youngest and oldest the older practitioner can do much to unite the two in thought and action and so perfect the oneness which is the keynote of the county society. This service rendered so quietly that only the most observant perceive it, done in season and out, to the wayward as well as the shining light, the ignorant and the learned, the humble as well as exalted, done by timely word, kindly act or gentle reproof, done not for self glorification, but to promote the growing of a better professional life, is the food on which the older practitioner may grow to the largest professional life possible to one of his natural ability and environment.

Sixth—Many years since the writer heard a successful practitioner lament that he had few friends among young practitioners. Had he been active in his county society such lament could not have been made, because he would have met these, one by one, as they appeared in the society, and formed many lasting friendships. The mutual interchange of kindly acts would have pre-

served his elasticity and brightened life's decline.

Seventh—An atmosphere of kindness, honor and mutual helpfulness is necessary for the best growth of the older practitioner. Such atmosphere can be best created and sustained by a properly conducted county society. In it the older practitioner will grow old less rapidly; in it he will find the stimulus for his best work; the worry of practice will be at a minimum and the joy from good work deftly done, at a maximum.

Thus we have enumerated seven value-factors of the county medical society out of the dozens that might have been listed—all furnishing potent reasons why the older practitioner should be most earnest in promoting his own society. These are:

1. His society will increase his knowledge of the medicine written in books, medical journals or society proceedings.
2. It will broaden his knowledge of his fellow doctors—a most important equipment of every practitioner.
3. It will reveal himself to himself in many ways, so substituting attractive modesty for arrogant conceit.
4. It is a crucible for refining his studies, his observations, his thinking, thus augmenting their practical value.
5. It aids in developing his capacity to teach—his patients, their friends, fellow doctors or the laity. To think logically, write clearly and speak, while standing, convincingly, is absolutely essential to the older practitioner's highest power.
6. It gives him a chance to work for all his fellow practitioners and so attain the largest individual growth—in accord with the Master's dictum: "He that would be the greatest among you, let him be the servant of all."
7. It creates an atmosphere of kindness, necessary for the older practitioner's richest life.
8. It gives him friendly alliance with youthful exuberance behind and matured judgment before, essential for the rounding out of the most perfect professional career.

Finally the elder practitioner, who would reap the richest harvest from his county medical society, will seek to do something for it, as well as get something from it.

The second paper was by Dr. Davis.

## THE VALUE OF THE COUNTY MEDICAL SOCIETY TO THE YOUNGER PRACTITIONER.

JAMES E. DAVIS, M. D.

Our distinguished American diplomat, Andrew D. White<sup>1</sup> has written this comment upon Russia's most noted litterateur: "Of all distinguished men that I have ever met, Tolstoi seems to me most in need of that enlargement of view and healthful modification of opinion which come from meeting men and comparing views with them in different lands and under different conditions."

The enlargement of view and healthful modification of opinion are as much needed by the physician as the literatist. The young physician will doubtless attain unto broader vision and safer opinions in due proportion to the extent of his personal experience in the direct practice of his profession, yet like Tolstoi he will, though known to all the world, have need of meeting men for comparison of views.

"It is to the glory of medicine that its doctors are united in a single aim,—the alleviation of physical suffering; and it is to the honor of this profession that there exists among its members in every nation a splendid sympathy and disposition to mutual helpfulness. Every medical community freely brings its knowledge and the products of its experience, and adds them to the common store, dedicated to the service of humanity."<sup>2</sup>

The transactions of a society present the index of medical progress in the community and afford opportunity of closer touch with the work of one another, thereby fostering the ideal of the highest possible standard of equipment for the prosecution of the work and duties of the profession.

The local medical society is of greater utility to the younger than the older practitioner. It is yet the formative period with the younger worker. He is testing for first hand truth by trying out the numerous theories heard from varied sources.

Many of the fads advocated with such vehement enthusiasm are proving useless or impractical. The dicta of the most beloved text books are found inadequate and often untrue. The positive and zealously advocated teachings of the most brilliant in the professorial chairs come to naught when set over against a newly discovered truth. It is impressed upon his mind that science

refuses to accept, unless accompanied by proof, the dicta of any master. A notable example of the truth of this is found in the oration given by Mr. Erichsen at the opening of the University College Hospital at London in 1873. In an address on the *Finality in Surgery* he said:

"There must be a final limit, the knife cannot always have fresh fields for conquest. That this limit has nearly, if not quite, been reached will appear evident if we reflect upon the great achievements of modern operative surgery. *Very little remains* for the boldest to devise or the most dexterous to perform."<sup>3</sup>

Almost within gunshot of where Erichsen stood when delivering this oration, Lister was revolutionizing surgery by his remarkable work in asepsis and antiseptis. On the continent at this same time, Billroth and his pupils were demonstrating the successful removal of the larynx and the pylorus. Mr. Erichsen was at that time justly considered to be one of the foremost of living British surgeons.

There is no finality in any branch of medical science. There is constant progress. To keep abreast of this progress would impose the dictum of Lord Brougham. "Read everything of something and something of everything." This is obviously impossible, but the transactions of a good society suggest a sort of clearance house where free exchange can be made of negotiable medical specie.

If the younger member has most time for reading, he can with his *Index Medicus* ascertain the progress of the world in the subject up for discussion and though an Erichsen may make a *pronunciamento*, some young man may contravert the facts stated, if not in harmony with recently discovered truth, and his listeners have the truth for its hearing.

It is a frequently heard comment that the younger members of the medical profession lack self confidence and consequently fail to inspire the confidence of those who employ them. The effect of active membership in a good medical society is to aid the honest and earnest man to that professional poise of manner and discipline of knowledge and character that will engender *quiet self respect* which is the basis of all confidence. The poorly equipped and inefficient man is face to face with his shortcomings at least once a week in the local medical society and this is nearest to attending school again.

The business phase of the practice of medicine has been the undoing of many splendidly educated young physicians. In the community is



a doctor of very inferior qualifications whose practice is wonderfully lucrative. His type is found in almost every medical society, though this is not his natural habitat. He is known to some as a "jiner," for he belongs to all the lodges, great and small. He is in the vernacular of the day—a business getter. Strange as it may seem to many scholarly young practitioners there are some lessons especially profitable to be learned from this kind of man. Oxenstiern's famous utterance: "Go forth, my son, and see with how little wisdom the world is governed," is replete with suggestion upon this point.

It is said that the value of the local society is limited for the younger members, because it is usually the same men who read papers year after year. The fault of this is with those who do not present papers, for all are solicited alike to contribute.

Many young physicians say they have nothing to write about while their experience is so limited. This certainly would be true in most instances if clinical papers only were acceptable. The dictum of the critic Carlyle that "men should defer work in literature until they really have some worthy message to deliver," has been wrongly taken to mean defer literary work until a rich experience has been acquired. A worthy message may belong to the most recent graduate or even the undergraduate.

Two of the most interesting contributions to the medical literature of 1906 are upon such subjects as any young man might use for a very worthy message, viz.: "Dr. Garth, The Kit-Kat Pot," by Harvey Cushing, M. D., and "Laron Larrey: A Sketch," by J. Chalmers Da Costa, M. D., published in the January and July numbers of *The Bulletin of The Johns Hopkins Hospital*.

It is said by many good critics that few physicians learn well the art of writing. One critic pointedly remarks: "Few only attain to a respectable facility in the expression of ordinary ideas."

The impression prevails with many that public speaking is more difficult than writing. Yet the speaker has at command all the resources of gesture, of look, accent, tone, mien. But with all these advantages, few men in this society would feel satisfied with his diction when transcribed to paper. The county society is an opportunity at the very door of our young men, where the art of speaking and writing can be improved.

Arlo Bates says "The devils of incoherence, obscurity and incompetency go not out save by

untiring striving and watching." In other words the way to learn to write is to write or a better way to learn to write is to rewrite.

No literature can go far or effect much which does not call suggestion to its aid. A thorough discussion of the papers read before our society will prove invaluable to not only their writers, but to those taking part in the discussion as well as to the hearers.

One of our most noted statesmen has said, "The man I don't like is the man I don't know." An invaluable means for acquaintance with our colleagues is afforded in these weekly meetings, for in due time a careful observer will know quite accurately the professional and general character of all who attend. It is according to opinions here formed that we will select our consultants.

After all that can be said of the value of the county society to the younger practitioner, individual temperament and individual purpose must in the end determine, for education is a unit.

1. *Autobiography*, vol. ii., p. 84.
2. *New York State Journal*, Ed., March, 1906, p. 130.
3. *Lancet*, Oct. 4, 1873.
4. *Pleasures of Life*, Lubbock, pt. 1, p. 62.
5. *The Art of Writing*, p. 11.

### THE VALUE OF THE COUNTY MEDICAL SOCIETY TO THE COMMUNITY.

G. L. KIEFER, M. D.

The value of the county medical society to the community is best expressed in Article II. of the constitution under the title "Purposes of the Society," as follows: "The purpose of this society shall be to bring into one organization the physicians of this country; and by frequent meetings and full and frank interchange of views to secure such intelligent unity and harmony in every phase of their labor as will elevate and effectuate the opinions of the profession in all scientific, legislative, public health, material and social affairs, to the end that it may receive that respect and support within its own ranks and from the community to which its honorable history and great achievements entitle it."

If we have lived up to and conscientiously carried out this purpose of our organization there can be no question but that the county medical society has been of inestimable value to the community; if, on the other hand, we have fallen short of this purpose in some respects, let us begin now to make up for lost time so that, as the constitution says, we may receive that respect and support from the community to which we,

as a society, are entitled.

Have we in the past labored along all the various lines laid down in the article of our constitution above cited? Frequent meetings have been held at which scientific medical questions have been considered, but how much attention has been paid by the society as such to legislative and social problems and matters pertaining to public health? As one of our purposes is to encourage a "full and frank interchange of views," I will endeavor to be frank in my brief consideration of this subject. Several years ago the question of a general vaccination of the City of Detroit was before the Common Council inasmuch as an appropriation for that purpose had been asked for by the Board of Health. The Committee on Health of the Common Council referred the question to the physicians of the city and a largely attended meeting of the Wayne County Medical Society was held in the Council Chamber. After a discussion of the question, a resolution was unanimously adopted endorsing the position taken by the Board of Health in asking for an appropriation for a general vaccination. This action on the part of the society had much to do with the subsequent allowance of the appropriation by the Common Council. The vaccinating was done and smallpox soon disappeared from our city. Surely this is one instance in which the county medical society was of value to the community.

Again, the following year, the society took up the question of improving the milk supply of the city of Detroit. It was decided, after careful consideration of this subject, that the best results could probably be obtained by the appointment of a "Milk Commission," whose special duty it would be to co-operate with the Board of Health in its efforts to improve the general milk supply of the city and to take such other steps for this purpose as might seem advisable. The Milk Commission of the Wayne County Medical Society was accordingly appointed, but little has been done along its line of duty. This inactivity is, however, the fault of the commission and not of the society. In New York much has been accomplished by the Milk Commission of the Medical Society of the County New York, and good work has been done by the Milk Commission appointed in Philadelphia by the Philadelphia Pediatric Society. This question is one that might well be further considered by the society and further action in this respect would undoubtedly be of value to the community.

Last year steps were taken by the Wayne Coun-

ty Medical Society to limit the spread of venereal diseases. A public meeting was held, the object of which was to arouse the public by making them acquainted with some of the terrible facts resulting from the prevalence of venereal disease in this community. The meeting, which was the first of the kind ever held, was largely attended and the interest aroused in the audience was great. The action taken by the meeting was the appointment of a committee to further this good work. Too much cannot be said in favor of this action by the society which was begun and pushed to its execution by last year's President, Dr. Carrier. Indeed, nothing could be undertaken by the organized medical men of any city which would prove of greater value to the community.

I have cited some of the questions pertaining to "legislative, public health, material and social affairs" that have been considered by the county society, now let us look at some other problems that might receive the attention of the society if it is desirous of being of greater value to the community. First and foremost is that greatest of all medical, social and public health problems—the restriction and prevention of consumption. This question has up to the present time received little or no attention from the county medical society, although it is clearly our duty to take hold of the problem if we are to carry out the purposes of the society as laid down in the constitution. In order to limit the spread of tuberculosis the very first thing necessary is the notification of cases. In the state law, as it now reads, requiring physicians to report certain diseases, consumption is not specifically mentioned. The law makes it compulsory for physicians to report cases of "smallpox, scarlet fever, diphtheria and any other diseases dangerous to the public health."

Several years ago the Board of Health of Detroit determined that tuberculosis is a disease dangerous to the public health and required its notification. Some physicians refused to report their cases and were prosecuted. The question has never been settled and progress against the spread of the disease has, as a consequence, been impeded. If it is one of our purposes to take up these subjects why should not the society take some action looking towards the systematic reporting of these cases in Detroit so that the Board of Health might make greater headway in its uphill fight against tuberculosis, by knowing where the cases are located. This would give the public health authorities the opportunity

of at least furnishing householders with proper instructions about the restriction of tuberculosis and the further opportunity of disinfecting the premises in case of removal of the patient from one house to another. Surely such action would be of value to the community.

What I have said about reporting cases of consumption applies equally well to typhoid, measles and other diseases not specifically mentioned in the law.

Referring again to the endeavors on behalf of the Board of Health to restrict consumption, I am reminded of the tuberculosis exhibit recently held in this city. The exhibit was brought here by the city, money having been allowed for the purpose by the Common Council upon request of the Board of Health, and the work of arranging a program and carrying it into effect was done by a committee of physicians appointed by the Board of Health, all members of the Wayne County Medical Society. One of the first things considered by the committee was how to obtain the co-operation of the profession. It was unanimously decided to send a personal letter to each member of the Wayne County Medical Society asking his co-operation by his attendance at meetings and in every other possible way. A special opening meeting for physicians was arranged, and of the 450 appealed to, about twenty responded. More than that, the doctors were conspicuous by their absence throughout the entire week, and I have even been told that one of the older members of the society has been saying that the tuberculosis exhibit was "a political move on the part of the Health Officer and some of his friends to advertise themselves." Here was an opportunity for the society to carry out one of its purposes by getting a larger number of people to attend the meetings in connection with the exhibit and thus become of greater value to the community.

Another question that is under consideration at the present time and which is of value to the community is the erection and maintenance by the city of a hospital for contagious diseases. The sum of \$100,000 has been allowed for this purpose and a site has been purchased, but further progress has been stopped by a temporary injunction being granted to prevent the erection of the buildings for such an hospital on the ground that its maintenance would be dangerous to the people living in that vicinity on account of the spread of disease from the hospital through the atmosphere. It is not intended to admit smallpox patients to the hospital, but

cases of scarlet fever, diphtheria, measles and other contagious diseases are to be received. Certainly none of our citizens know better than the physicians that there is no danger from such an institution when properly conducted, and consequently it might be proper for the medical society to consider this question and take some action which would hasten the erection of this hospital so much needed in Detroit. I am sure such action would be of value to the community.

It would be possible to enumerate a number of other questions that might be taken up by the society, but the time allowed for this paper is more than exhausted.

In conclusion I desire to say that the organization of the physicians of this county into one society for the purposes as stated in the constitution, has been of value to the community and it can be made of greater value by a little effort on the part of its members.

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#### THE VALUE OF THE COUNTY MEDICAL SOCIETY TO THE MEDICAL PROFESSION.

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F. B. TIBBALS, M. D.

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We have considered the value of the county medical society to its members, both young and old, and to the non-medical community and have now to briefly outline its value to the medical profession as a whole.

Of the population of the United States, one or possibly in some communities, two out of every thousand are practicing physicians, locally, a small percentage, but totaling a large number of men with similar aims, objects and occupations. No body of men, except the clergy, wields so large and disinterested an influence for the public welfare. This is so because physicians as a class are educated men, whose work brings them into intimate relations with all the people, who consequently look to them for advice and guidance along social, moral and hygienic lines. This responsibility to others which is fundamental in our profession, may be tacitly taken for granted but besides the duty each physician owes his fellow men, there is a duty which he owes himself and family—namely to get for himself and for them his fair share of happiness and his just

proportion of the emoluments which add to the joy of living and sweeten old age.

How can he best do this? We answer, by associating himself together with his coworkers in the local or county society. The advantages of such association are both mutual and individual. Individually, each man profits by social acquaintance with his fellows and by imparting to and receiving instruction from them, and mutually each individual is a sharer in the common weal of his profession. An overcrowded profession and low fees affects each individual, the converse being true as well.

What then does the county society do for the profession?

It provides the best means of social acquaintance and mutual instruction for its members, uniting in bonds of fellowship, workers in a common cause.

It maintains a standard of excellence which upholds ethics and morals, decries and discourages violation thereof and thus uplifts the morale of the entire profession.

In the exact ratio of its strength and activity will the county society impress itself upon the community and thus aid the profession, because the profession always benefits by enlightened, intelligent understanding of its aims and objects.

In the demand for pure food, pure drugs, sanitary surroundings and the prevention and restriction of communicable diseases, including those of venereal origin, the profession has taken the lead in creating public sentiment, actuated solely by the disinterested motive of bettering the body politic, and yet the seeming paradox that the profession, in working for the benefit of the laity benefits itself, is nevertheless true.

In demanding a high standard of education as a prerequisite to practice, in opposing quackery, illegal practices and obscene advertising, the profession works directly for the benefit of the laity, but indirectly profits thereby because better educated medical men means a pleasanter, and possibly lessened, competition, while the suppression of the quack and "nasty" advertiser protects the public from fraud and drives them, of necessity, to the honest practitioner. After all, the most important thing which the county society does is to promote harmony, good feeling and *esprit de corps* among the profession, thus protecting the individual against an otherwise unfairly sharp competition. Universal good fellowship means universal application of the Golden Rule, which does not admit of backbiting, misrepresentation or damaging allegations regard-

ing a competitor, and we are all competitors, for no one of you has ever seen a doctor too busy or too rich to take other patients, but so long as he treats you and me fairly let him have them. There will still be some left.

Through the aid of the county society the doctor who is unfair becomes a marked man and unless born with the devil in him, reforms rather than end his days labeled "unclean."

Thanks to the good feeling now existing in the profession, the great menace of the doctor, the blackmailing damage suit is much less threatening than formerly, for with unity and harmony existing, the unkind word of criticism from a brother practitioner which suffices to incite these cases is wanting. Moreover, when the profession is united, united action in resisting these unfair demands becomes possible.

The regular profession should go a step farther and admit to membership in the county society every legally licensed practitioner who is decent in his practice. The day of pathies and sectarianism in medicine is past and all physicians should be united in bonds of fellowship for the common good.

Of the work of the combined county societies of the United States as carried out by their representative bodies, the state societies and the American Medical Association, it is perhaps hardly my province to speak, yet I cannot forbear to call your attention to the vast amount of good work being done. The adjustment of the insurance examiners's fee, the suppression of the patent and proprietary medicine evil, the regulation of medical schools, the establishment of interstate reciprocity in licensure, and the recent legislation of various states for the limitation of abuses and the betterment of the profession, all speak volumes for the efficacy of the organization of which the county society is the hub of the wheel.

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In opening the discussion, **Dr. T. A. McGraw** said: No reasonable and unprejudiced man can doubt but that the organization of the county, state and national bodies is the best which has ever taken place. It is frequently most important that the profession should act as a unit to produce certain effects. This action must sometimes be taken through the board of health and sometimes through political channels. When all of the legalized profession is thus fused, its influence is tremendous. This is but one aspect of the county society.



In regard to the young practitioner, it is most important that he be properly influenced, for upon this depends whether or not the profession in the future shall be actuated by high or low ideals.

Dr. Davis said that the young practitioner is often timid about speaking. In one way this is an advantage, for he is put under a discipline. He ought not to speak unless he has something to say, but it is his duty to have something to say. Medicine is replete with unsolved questions, and it should be one of the functions of the county society to impose such tasks upon the younger members.

**Dr. H. D. Jenks** emphasized the advantages of the fellowship which the county society engenders. Through it the new comer can become known. It is also invaluable for the information which can be there obtained.

**Dr. E. H. Hayward** spoke of the good work which might be done along the line of influencing public opinion regarding dust, smoke and spitting.

**Dr. S. G. Miner** said that the value of organization is known to all. The time is passed when individual effort can accomplish much. This is recognized by the labor unions, by the patent medicine proprietors, by charlatans and by the medical advertisers. We must have the confidence of the people, and to achieve this we must be as near perfection as possible. This we cannot approximate without unity.

**Dr. W. J. Wilson, Jr.**, emphasized the necessity of supporting and remaining loyal to the American Medical Association.

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### Michigan Personals

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Dr. and Mrs. A. G. McLeod, Calumet are in Scotland.

Dr. James A. Ardiel, Grand Rapids, has returned from a two months' trip to Great Britain.

Dr. Frederick McOmber, Berrien Springs, who has been seriously ill with heart disease, is reported to be improving.

Dr. Fanny L. Draper, Jackson, will sail this month for Foo Chow, China, to take charge of the Methodist Hospital.

Edward Spanner, Lansing, has given an operating room and heating plant to the Women's

Hospital and has in addition, provided for the grading and beautifying of the grounds.

Dr. Guy C. Keller has located at Assyria.

Dr. A. R. Williams has entered practice at Jackson.

Dr. S. Sudrawski has been unanimously elected chairman of the Public Health Department of Manistee. The board is making arrangements for a systematic school inspection and is considering the appointment of an instructor for the schools in hygiene and bacteriology. On assuming the chairmanship Dr. Szudrawski presented an able address on "Science the Best Hope," in which he set forth what he believes should be the activities of the department.

Dr. William McCallum of Gladstone has removed to Minneapolis.

Dr. L. N. Yerkes has removed from Gladstone to Bay City.

Dr. Andrew Nelson has located in Escanaba, having removed from Manistique.

Dr. L. M. Power has entered practice in Gladstone.

Dr. P. J. Livingstone has left Caro and after a year of study will locate elsewhere in the state.

Dr. S. S. French of Battle Creek celebrated his ninetieth birthday August 25.

Dr. P. M. Hickey of Detroit has been honored by being elected president of the American Roentgen Ray Association.

Dr. L. Lundwell has located in Iron Mountain.

Dr. J. C. Tufford, formerly of Owosso, has located in Detroit.

Dr. L. P. Freiber has located in Escanaba.

Dr. Wilfrid Haughey, Detroit College of Medicine, 1906, has entered practice in Battle Creek.

Dr. H. H. Sanderson has removed his office from Windsor to Detroit.

Dr. C. D. Aaron of Detroit is the new president of the Northern Tri-State Medical Society.

Dr. Victor Yale has moved from Deerfield to Sault Ste. Marie.

Dr. Ralph Engle has opened an office in Petoskey.

The State Board of Registration has appointed Dr. W. L. Shuart a member of the board of preliminary examiners.

Dr. G. S. Field of Detroit has returned from Europe.

## Marriages

C. Maurice Stafford, M. D., to Miss Fannie S. Cotton, both of Detroit, June 26.

V. D. Farmer, M. D., Parma, to Miss Grace Dutcher of Jackson, August 14.

Patrick J. Sullivan, M. D., to Miss Malvina Moran, both of Muskegon, August.

James M. Cooper, M. D., Detroit, to Miss Hattie Craft of Grass Lake, August 22.

C. W. O'Brien, M. D., Wyandotte, to Miss Florence I. Ellis of Maitland, Nova Scotia, August 21.

R. A. Rish, M. D., Pellston, to Miss Grace Owens of Bellaire, August 16.

A. H. Gorenflo, M. D., Detroit, to Miss Hattie Clippett of Wyandotte.

## Deaths

James M. Stringham, M. D., died at his home in Carson City, July 20.

Donald A. Link, Volinia, was accidentally drowned in Moon River, near Ravenhurst, Ont., August 15.

W. T. Cody, M. D., died in Toronto General Hospital, August 28, a few hours after an operation for brain tumor.

Dr. C. E. Howland of Adrian died September 1, aged 75 years.

## Obituary

### DAVID V. YEREX, M. D.

Dr. David V. Yerex died in Harper Hospital, Detroit, from shock, an hour after an operation for removal of a cancer of the colon.

Dr. Yerex was born near Picton, Ont., April 21, 1845, and was a few months over 61 years when he died, Aug. 27, 1906. Graduating from Bellevue Medical College in 1869, he came to Lapeer county over 40 years ago, first locating at Black's Corners, he later moved to Imlay City, where he practiced over 30 years.

Dr. D. V. Yerex was a man of strong personality and sterling qualities. By thrift and indus-

try he accumulated considerable property.

As a physician he was a careful diagnostician and a successful practitioner. He has held many offices of trust, as administrator of estates; was mayor or village president of Imlay City for five consecutive terms. At the time of his death he was one of the superintendents of the poor for Lapeer county. A widow, and one son of 15 years, survive him.

He was a regular attendant of the medical societies and at his funeral the Lapeer County Medical Society attended in a body. The funeral services were under the auspices of the Masonic Order.

H. E. RANDALL.

## Correspondence.

Austin, Texas, September 5, 1906.

Dear Colleagues:

We have the honor to inform you that we are instructed by the Committee on Invitations to advise you that your body is cordially invited to send delegates to the meeting of the American International Congress on Tuberculosis to be held in the City of New York, November 14, 15 and 16, 1906, next, and to send a list of the same as soon as convenient to the Secretary to enable our Committee to arrange for a reduced transportation for the same.

It is highly desirable that the efforts of Sanitarians and of all enlightened Humanitarians, lay and professional, should be unified and concentrated in the endeavor to limit the spread, and, as far as may be possible, to remove the causes of the great scourge of the human family.

There is and should be no spirit of rivalry; all the organizations for this laudable work should co-operate for the accomplishment of the great end sought.

With assurances of high esteem and regard and an earnest desire that every organization interested or engaged in this conflict with tuberculosis may combine their efforts in a common cause, we remain,

Very faithfully yours,

F. E. DANIEL, M. D.,  
President, Austin, Texas.

MATTHEW M. SMITH, M. D.,  
Secretary, Austin, Texas.

CLARK BELL, LL. D.,  
Treasurer, 39 Broadway, N. Y.

H. EDWIN LEWIS, M. D.,  
Vice-Chairman of Council,  
100 William St., New York.

## Progress of Medical Science

### MEDICINE.

Conducted by

T. B. COOLEY, M. D.

**The Therapeutic Value of Lecithin.**—LANDSBERG'S exhaustive review of all the literature concerning lecithin is of interest in view of the present exploitation of this substance and of various preparations supposed to contain it or its compounds by various drug firms. He treats first of its chemistry and its functions in normal metabolism, and then, of the experimental and clinical evidence as to its therapeutic value. He concludes that lecithin has an undeniable value in many forms of secondary anemia—often where iron has proved to be of no benefit. There is nothing in the literature regarding its effect on pernicious anemia. This effect in the anemias is to be attributed, partly at least, to the stimulation of normal metabolism which seems to be the chief physiological effect of lecithin.

In the other cases where favorable results have been obtained from this drug, and the list of diseases is long, it seems certain that its good effect came from the correction of a sluggish or disturbed metabolism, and that no such specific action as has been claimed can be attributed to it. The effect on metabolism should make it valuable in rickets, but clinical results have not been convincing. It has been of use in the inanition of infancy.

The indications for its use are, therefore, the presence of a secondary anemia or defective absorption or assimilation of fats or proteids. In most cases it is best given raw as yolk of egg, which contains a high percentage of lecithin, but for infants, the pure drug added to the milk is better. For subcutaneous injection, solutions in oil are best borne. *Centralbl. f. d. Phys. u. Path. d. Stoffwechsels*, April, 1906.

**Epidemic Miliaria.**—SCHOLTZ reports his observations during a recent outbreak of this rather uncommon disease, with an analysis of 32 cases. The outbreak occurred in a rather poor district, with unhygienic surroundings and dwellings, and a doubtful water supply. There were in all 125 cases, with 21 deaths. Children, in spite of constant exposure, were not affected, and most of the patients were persons in middle life.

The disease is divided into three stages. 1st. Fever and sweating; 2nd, Eruption; 3rd, Convalescence. A prodromal stage is not always present.

A few patients were seized suddenly with fever, violent sweating, and great prostration. Most often the onset was gradual. Often there were prodromal symptoms of general malaise, etc.,

from two to six days. Chills were common; also epigastric pain. The usual onset of the acute attack was with chills or fever, and extreme sweating, so that patients had to change clothing as often as seven times in one night. The sweating lasts from three to six hours, to recur after varying intervals, with the preceding chill. Fever in this stage; thirst often severe. Pains in precordia and the epigastrium are complained of. Dyspnea is common.

Following the sweating is a period of high fever with somnolence and dry skin. Following this, three to eight days after the beginning of the sickness, comes the exanthus, beginning always on the neck or chest. This consists of very minute vesicles—sometimes isolated, but usually close together. There is no definite areola to each vesicle, but the whole skin is reddened—often to the color of scarlatina. The spread of the eruption is very rapid. The trunk is usually covered—the extremities and face rarely. The fluid in the vesicles is clear at first, but soon becomes turbid and yellow, then gradually thickens with crust formation. The crusts fall after two to six days, and after this fine desquamation is not uncommon. Recrudescences with renewed sweating and fresh eruptions are common. The severe symptoms diminish during the stage of eruption, the fever subsiding, and the pains and sweating gradually disappearing, and the patient enters into a tedious convalescence.

Throughout the attack the appetite is lost, the tongue coated, and constipation is the rule. The pulse is soft and not increased in frequency in proportion to the fever. The heart and lungs show no lesions. The spleen is seldom enlarged. The urine shows little.

Choreic movements may occur. Death occurs during the first and second stages with signs of heart failure, or sometimes with delirium and convulsions and coma.

The blood shows hypoleucocytosis. The lymphocytes and eosinophiles are relatively increased. Microscopic examination of the contents of the vesicles shows nothing special. Blood cultures show a long slender organism, apparently a vibrio, which seems to be peculiar to this disease. It is uncertain whether the disease is directly communicated, or through an intermediary, such as the flea—many cases followed popular assemblies, as at church. No especial therapeutics or preventive measures are recommended.—*Zeitschr. fuer klin. Med.*, Vol. 59, p. 542.

## SURGERY.

Conducted by

MAX BALLIN, M. D.

**The Technic of Operations on the Central Nervous System** was the subject of the address on surgery presented by SIR VICTOR HORSLEY at the recent meeting of the British Medical Association in Toronto. The paper gives an epitome of the author's technic as it has developed during 20 years, his first cases having been presented in 1886.

The advance in technic has been relatively less than the advance in our knowledge of the seat and nature of diseases for which surgical intervention is necessary. A great deal of vital pathology and of the anatomical nature of brain disease has been learned in the operating room. When should medicinal treatment cease and operative begin? In general a three months' prophylactic treatment should be the limit.

Operative procedures may be palliative or curative. Palliative measures are usually undertaken for the relief of optic neuritis, headache or vomiting. Under curative treatment, the great point to be determined is whether or not we can get compensation of function when various parts of the cerebrum and cerebellum are destroyed.

(a) *Preparation.* Diet, etc., as for any operation. Disinfection of scalp with carbolic and sublimate for two days. In some cases preliminary administration of calcium chloride.

(b) *Anesthetic.* Always employ a general anesthetic. Pure chloroform has been used by HORSLEY for many years. Ether causes too much rise in blood pressure and too great an increase in blood venosity. Chloroform is, however, more dangerous, because of its effect on the respiratory center. A very interesting discussion of the dosage of chloroform is given.

(c) *Maintenance of Body Temperature.* Operating room should be at least 75° F. This also arrests capillary oozing.

(d) *Hemorrhage.* As few veins as possible are to be blocked. All arteries around the lesion are to be tied before extirpating it. Hot irrigation controls bleeding from arterioles and capillaries. All bleeding from the bone must be stopped by plugging with wax. Inhalation of oxygen is also a valuable means of stopping venous oozing.

(e) *Shock.* It is the opening of the skull which most frequently causes shock. Mallet and chisel are condemned, as no vertical pressure should be

made. The treatment of shock must be in accordance with the symptoms which threaten life, according as the respiration, the circulation or the body temperature are affected.

(f) *Sepsis.* Nowadays, when many surgeons can show an unbroken record of successful operations for hernia or appendicitis in the cold stage, it is not completely realized how very different should be our estimate of the proclivity of the central nervous system to invasion by septic micro-organisms and the extremely feeble degree of its resisting powers. The less drainage used the better.

(g) *Displacement of the Brain.* In elevating a hemisphere, the pressure must be gradual, allowing the soft nerve tissue to mould itself.

In the treatment of malignant disease of the brain, operation most frequently fails. Malignant tumors frequently attain a considerable size before diagnosis is possible. Recurrence was observed in no less than 20 out of 23 of HORSLEY's cases. Operation should be resorted to as early as possible; the tumor should be, if possible, freely exposed and examined and extirpated with surrounding tissue; if it cannot be removed without undue interference with important or essential structures, there remains some possibility of the tumor undergoing retrogression in a certain number of cases.—*Br. Med. Jour.*, Aug. 23, 1906.

**Temperature in Appendicitis.** In the report of a clinic on appendicitis, MORRIS says: "With a pulse rate of 86 to 90 and a temperature of 100° to 100.8°, we have a fairly well marked condition that is quite characteristic of appendicitis of the colon bacillus variety. The toxins of some of the bacteria will send the temperature very high and from that height, it will vary rapidly. The characteristic temperature of the colon infection is a degree on either side of 100, so that a patient with a violent attack of appendicitis may have a temperature of from 99° to 101°, but averaging 100°, yet the same patient with a simple staphylococcal or streptococcal abscess might have a temperature of 103° or 104°. It is very common for the toxins of the colon bacillus to greatly depress the vital powers. If there is a temperature of 100° and a pulse rate of 120 we must be prepared to operate immediately, for it means impending disaster.—*Int. Jour. Sur.*, September, 1896.



## GYNECOLOGY AND OBSTETRICS.

Conducted by

REUBEN PETERSON, M. D.

**End Results in One Hundred Cases of Conservative Operations on the Uterine Appendages.**—MANTON of Detroit reports 100 conservative operations on the uterine appendages. Of the 100 women, 30 were single, 64 married and 6 not noted. The following operations were done: On the ovaries, resection of both ovaries in 17 cases, right ovary in 26 cases, left ovary in 13 cases. Puncture of both ovaries in 22 cases, left ovary in 13 cases. Puncture of both ovaries in 22 cases, right ovary in 8 cases, left ovary in 14 cases. In 19 women the ovary of one side was found to be so largely involved as to require removal, the right in 6 instances, the left in 13. Resection was done in both tubes in 13 cases, right tube in 4 cases and left tube in 9 cases. It was found necessary to remove one tube in 10 of the patients, the right in 4 and the left in 6. The opposite ovary was left untouched or was resected.

In the 100 women the immediate results were entirely satisfactory, that is, all the patients recovered from operation and were relieved from the sufferings of which they formerly complained. The mortality was, therefore, *nil*, and the results temporarily perfect. The majority of these patients remained under observation for at least three months. Following this quarter year, 61 are known to be well at present, 31 have been lost sight of, 5 are doubtful, complaining of pelvic pain referable to the resected ovary, but in which no change could be detected on examination, and 3 required a second operation for the removal of the conserved organ, which in each instance had undergone further cystic degeneration. Of the 64 married women, 55, or 85 per cent., and of the 30 single women, 23, or 75 per cent. were well a year following operation. Of 64 patients of whom knowledge was had a year or more following operation, 41 were married. Of this number, 6, 14 per cent, subsequently became pregnant; 4 of these were delivered at term, 1 aborted at the third month and 1 is still pregnant.

The foregoing statistics and those of others show that the conservative surgery of the ovaries and tubes having passed the experimental stage, has established itself as a legitimate and successful operation in all the conditions to which it might be applied properly, and that it should be the operation of choice in all instances during the child-bearing age, in which the diseased state of the organs admits of its employment.—*Surg., Gyn. and Ob.*, July, 1906.

**Tubal Pregnancy and Carcinoma of the Cervix.**—POKROWSKI admitted to hospital a woman aged 26, who complained of bleeding and pain in the lower abdomen. A diagnosis of carcinoma cervicis later confirmed by microscopic examination, was made. Further, on the right side was felt a tumor the size of a fist, whose nature was uncertain. The patient had borne one child. Her last period was nearly two months ago, and six days afterwards she suffered from severe pain in the abdomen and bleeding. At the laparotomy the tumor was found to be a dilated right tube which had ruptured. It was removed along with its ovary, and the left ovary which was diseased and the carcinomatous uterus were removed at the same time. Convalescence was uninterrupted except for the formation of a small abscess in the lower angle of the incision. The patient left hospital on the 24th day.—*Zent. f. Gyn.*, 1906, No. 16.

**A New Axis-Traction Apparatus.**—JACOBSON describes his device as follows: The apparatus is composed of a clamp, which attaches to the edge of a table; an outer case, enclosing a worm and gear (which multiply the power); two rods, the lower one telescoping, joined to the clamp by universal joints; a crank-handle for operating the power-producing mechanism; a hand-wheel at the outer end of the telescoping rod for controlling the transit of the outer end of the apparatus through the orbit which it must describe, when in operation, around the universal joints as pivotal points, a steel tape, which may be replaced by another if kinked without taking things apart, and which winds up on a drum upon which it is held and around which it is guided by a metal case containing an aperture into which the tape passes and which does not itself revolve; a small axle upon which the gear revolves, and a dynamometer, one of the needles of which is pushed along as an index by the needle proper, remaining at the maximum point reached during the operation for later reference. The needle is true to the scale, whether traveling up or down. The apparatus is made chiefly of an aluminum composition, and weighs about five pounds. This instrument enables the accoucheur to employ measured, steady, and precise axis-traction, with a minimum of force and no expenditure of physical energy on his part. The writer has had excellent success with it.—*Medical Record*, September 15, 1906.

## PATHOLOGY AND BACTERIOLOGY

Conducted by

A. P. OHLMACHER, M. D.

**Animal Experimentation With the Diplococcus Intracellularis (Meningococcus).**—Following a very careful study of an enormous material in which the bacteriology of epidemic cerebrospinal meningitis was pursued both during life and at autopsy, v. LINGELSHEIM and LEUCHS turned their attention to the question of pathogenicity of the meningococcus, over 100 strains of which were available for their purpose. Preliminary tests of virulence were made by intraperitoneal inoculations of freshly isolated cultures into white mice, a culture being classed as virulent if three loopfuls suspended in 0.2 ccm. normal salt solution killed the 15-20 gram mouse within 24 hours. So tested, 3 out of 39 cultures obtained by lumbar puncture of at autopsy were virulent, while 8 virulent cultures were found out of 19 from the naso-pharynx. Four experiments on white rats were negative, but young guinea pigs (250-300 grams) were found even more susceptible since they succumbed to the same dose of the cultures found virulent in the mice. Experiments with rabbits by various methods of inoculation were unsatisfactory. Intrapinal injections of suspensions ( $\frac{1}{4}$  culture in 0.5 ccm. normal salt solution) of living meningococci produced only transient illness in 3 goats and 1 dog. With monkeys, however, more satisfactory results were secured and the experimenters can justly claim priority in demonstrating the possibility of reproducing in the monkey, by intraspinal injections of living meningococci, a fatal affection with certain clinical and pathological analogies to epidemic cerebrospinal meningitis as seen in man. Their work was performed in June and July, 1905, with 8 monkeys of four varieties. Suspensions of a single agar culture in physiological salt solution representing several of the strains found virulent for mice were introduced by lumbar puncture. Illness with certain symptoms of nervous involvement like rigidity and spasticity of muscle groups, palsy, tremor, ataxia and opisthotonos followed, and the animal generally died during the course of the first four days. Autopsy disclosed increased and turbid

meningeal fluid, congestion, and in some instances cloudiness of the soft meninges and some purulent exudate.—*Arbeiten u ber die u bertragbare Genickstarre in Preussen in Jahre 1905*, Erster Teil, Jena, 1906.

(*Reviewer's Note.* The results of v. LINGELSHEIM's and LEUCHS' investigations upon the experimental meningococcic meningitis of monkeys have been confirmed by Flexner of New York, whose recent experiments have just been published.—A. P. O.)

**Investigations Upon the Biology of the Meningococcus.**—During the Silesian epidemic of 1905 KOLLE and WASSERMAN embraced the opportunity thus afforded for studying anew the specific microorganism. They investigated the presence of meningococci in healthy persons, and in those suffering from non-meningitic diseases in Berlin and found no microorganisms with the characteristics of true meningococci in these individuals with the exception of one in which the main symptoms of meningitis later developed, and another exposed by contact with a child suffering from meningitis. Concerning the possibility of identifying the true meningococcus from allied diplococci, no difficulty was experienced when the peculiar behavior on culture media (predilection for a serum-albuminous content), staining properties including the invariable Gram-negative reaction, the selective pathogenicity for young guinea pigs by intraperitoneal injections, and the specific agglutination with the serum of rabbits, goats, or horses treated with dead and living meningococcus cultures were noted. Attempts were also made to demonstrate the presence of opsonins and bacteriotropic substances in the serum of horses immunized against the meningococcus. It was found that thoroughly washed leucocytes, whether of the blood or in the peritoneal exudate of guinea pigs after injection of sterile bouillon, had the power of ingesting numerous meningococci, but this property appeared to be intensified when the cocci were treated with normal serum, and still more marked when the immune horse's serum was employed. *Ibid.*, Erster Teil.

## PEDIATRICS.

Conducted by

R. S. ROWLAND, M. D.

**Infantile Derangements Due to Imperfect Breast Feeding** is the subject discussed in a recent volume of International Clinics by LOUIS FISCHER, M. D.

FISCHER says that it is not to be supposed, because an infant is receiving breast milk, that it is doing well. Besides serious gastric and intestinal disorders, he has seen the severest type of rickets, marasmus, chronic dyspepsia, atony and dilatation of the stomach and intestines, the result of abnormal breast feeding during the first year. The majority of so called second summer worriments, he believes are usually dyspeptic conditions due to careless or ignorant infantile management. FISCHER considers the two most frequent errors met with, especially among the inexperienced, are underfeeding and overfeeding.

Underfeeding occurs most often among anxious and nervous mothers who devote their whole time to the baby. The child is one that will cry and appears fretful all day and sleeps very little at night. Such a baby usually has its fingers in its mouth and sucks on them. It drinks everything, even water, greedily. As a result of gulping its food very fast, it may be subject to colic and frequently vomits. The stools are usually of a spinach-like consistency and greenish in color, often containing white particles of undigested curd. Sometimes they are watery and contain mucus and curds. Underfed infants do not gain and frequently lose weight. Their extremities are cold. The circulation in the hands and feet is poor, and the rectal temperature is between 97° and 98° F.

The treatment depends on the success of the efforts to produce suitable milk. There should be the strictest attention to hygiene, by changing the mode of living, which frequently means separating the mother from the child except at feeding times.

FISCHER makes the following statements in regard to diet for the mother. If the chemical examination shows deficient proteid, this can be remedied by ordering the mother to eat meat and eggs in addition to cereals. If the fat in the milk is deficient, the addition of cream, butter, rich milk, and the yolk of several raw eggs daily will increase the percentage of fat. If the proteids are too high as evidenced by the too high percentage of casein, active exercise will reduce them. Sedentary habits usually increase the proteids. If the total quantity of milk is insufficient, the mother should have a hot drink of milk, soup, broth, or tea with milk a few minutes before each nursing.

Hot oatmeal gruel will frequently stimulate the milk supply.

If by chemical examination, we find the breast milk continues abnormal in spite of these changes in living and diet prescribed for the mother, or if the infant does not respond and improve within several weeks, we must consider a radical change. In some cases where the breasts fill very slowly, the question arises as to whether or not maternal feeding should be continued. In many cases wherein the state of the mother and the scanty milk supply are not amenable to treatment, the following suggestions are given; utilize as much breast milk as possible and substitute a bottle instead of every second or third nursing. Thus, we give the mother a rest and still utilize her scanty milk supply for alternate feedings.

Overfeeding is also a very frequent cause of trouble. The majority of young mothers during the first few months of an infant's life, interpret every cry to mean only one thing, hunger. Crying being the only means for infant expression, we should learn to exclude all the many other causes before deciding that the baby is hungry. The symptoms of overfeeding are frequent vomiting of sour, indigestible, curdled milk with associated dyspeptic colic. The temperature as a rule is elevated. The stools are usually yellowish and contain less visible casein than the underfed child. As a rule there is mucus of a glairy character with a good deal of gaseous fermentation. When passed the evacuations are of an explosive nature. The stomach is usually distended and tympanitic. The infant is uncomfortable and hence cries considerably. The circulation as a rule is good.

In treatment the strictest attention to the intervals and the manner of feeding is imperative. One must insist upon slow nursing. This should be accomplished by withdrawing the breast several times during the meal, which should extend over twelve to fourteen minutes, no less, rather somewhat longer. In some instances it is wise to order sweetened rice water or barley water after the nursing act is complete. Some infants do not assimilate starch, be it ever so dilute. We may give sweetened water instead, about one ounce after the infant has nursed.

In some instances the life of the child may depend on the rapid withdrawal of the mother's breast and the substitution of a wet-nurse if breast milk is demanded; in most cases artificial feeding will prove most satisfactory. *Inter Clin.*, Vol. 2, 16 series, p. 127.

## LARYNGOLOGY.

Conducted by

J. E. GLEASON.

**Ozena Treated by Paraffine Injection.**—BLAZ reports ten cases of atrophic rhinitis with ozena which had been treated by paraffine injection, and kept under observation from one to two and a half years subsequently. Five showed no trace of crust formation nor any odor, and are therefore, in a relative sense, to be considered cured. Three showed still a slight formation of crusts, which, however, were easily removed by blowing, and to which was attached not the slightest odor. Two cases, girls of 15 and 12 years respectively, were absolutely uninfluenced by treatment. For failure in these cases it is suggested the slight amount of atrophy present, and the possibility of hereditary lues. The result of this series demonstrates that no other treatment has given as good success as paraffine injection. Forty-five per cent paraffine was used, and the best results obtained by injecting cold with Onodi's syringe. Injection was made under the mucous membrane of the septum in all cases when injection into the turbinates did not sufficiently narrow the nares, or when the septum was especially covered with ill-smelling crusts. The amount injected at one time varied from  $\frac{1}{2}$  to  $1\frac{1}{2}$  ccm. The author advises against spraying the nose, cleansing being best obtained with a Gottstein tamponade.

Treatment of ozena by paraffine is based upon the supposition that an essential factor is abnormal width of the nares. Freeze demonstrated that the ozena secretion is produced odorless, and that foetor arises from products of putrefaction, as well as from a plentiful supply of volatile fatty acids, resulting from direct decomposition of neutral fat. On account of this abnormal quality of ozena secretion, numerous microorganisms quickly transform the odorless secretion into a foul-smelling one. Following each injection of paraffine is a reactionary swelling, with an increased watery mucoid discharge, which is odorless. This lack of color is due to the consequent facility of removal of secretion by blowing. Wide nares offer a marked hindrance, as the expired air can not exert the force possible under normal conditions. The mere narrowing of the nose, therefore, favors removal of secretion, and since it is secreted odorless, a lessening of the odor. However even if the changes produced by atrophy are considered an essential symptom of

ozena, the chief cause must be laid to a hypersecretion of the mucous membrane—consequently in a disease of the latter itself. The principal effect of paraffine injection is therefore its influence restricting secretion by pressure on the mucous membrane. This influence is a permanent one, on account of the replacement of the paraffine by connective tissue. The obliteration of folds and recesses is also unfavorable for the growth of bacteria. So far as the author is aware, no untoward results have occurred in cases of ozena treated by paraffine injection.—*Archiv für Laryngologie*, xviii, 3.

**Therapeutic Suggestions.**—Among other things WILEMSKY advocates the use of paraffine gauze in all packing of the nose, especially anterior tamponade. Its advantages are that it does not absorb secretion and therefore remains sterile, as paraffine is not a culture medium. It produces no chemical or mechanical irritation to the mucous membrane, and therefore no resulting swelling and headache. It does not adhere to wounded surfaces, is easily removed without syringing, and therefore causes no renewed hemorrhages. Marked success is also obtained in its use in peritonsillar abscesses. The gauze is inserted into the opening, thus maintaining it patent, and allowing free drainage. Paraffine gauze is prepared by impregnating plain gauze with a mixture of two parts white vasoline with one part 58° paraffine.

The Author's method of paraffine injection in ozena is as follows: After injecting Schleich's solution into the septum, an incision is made one centimeter long down to the cartilage and the mucous membrane together with the perichondrium and periosteum elevated as far as possible, especially toward the floor of the nose since the narrowing of the inferior meatus is of special importance. Into the sac thus formed is introduced the nozzle of a syringe containing cold paraffine, and the anterior part of the nose then tamponed. This serves after removal of the syringe to close the opening and prevent the escape of the paraffine, and is to be left in position until the following day. The injection is to be carefully made, the syringe being slowly withdrawn as the patient experiences pain, which indicates a stretching of the mucous membrane.—*Archiv für Laryngologie*, xviii, 3.



## DERMATOLOGY AND SYPHILIS.

Conducted by

A. P. BIDDLE, M. D.

**The High Frequency Spark in the Treatment of Premature Alopecia.**—It will suffice to recognize two general forms of premature alopecia.

First.—Loss of hair due to systemic and neurotic disturbances. Under this heading is included all cases of alopecia in which there is no evidence of the desquamative diseases. It also includes all grades of alopecia areata.

Second.—Loss of hair primarily due to bacterial invasion. This includes all the cases presenting evidence of local disease, with the exception of tinea, favus, etc. In short the condition usually known and recognized as pityriasis, seborrhoea sicca, and seborrhoea oleosa.

At a glance it will be seen that the successful treatment of alopecia depends upon the proper employment of the three following rudimentary principles:

First.—The use of parasitocides to destroy bacterial invasion.

Second.—The use of internal remedies and hygienic measures to improve the general health.

Third.—The production of an improved local circulation.

As has already been mentioned, in a vast majority of the cases of alopecia, the loss of hair is produced by a bacterial invasion, causing a condition usually called either seborrhoea sicca, or seborrhoea oleosa, depending upon the local condition found in an individual case. In many of these cases the hair will cease to fall out, and begin to grow again as soon as the cause of the trouble is overcome. In such cases all that is required is the daily use of a parasiticide. In cases of long standing associated with impoverished circulation and vitality it is often necessary to employ some irritant in addition to the above treatment. Many patients having an alopecia produced by worry, overwork or other forms of nerve exhaustion will respond at once to regulation of the diet, attention to proper hygienic measures, internal remedies, and the local use of irritating or stimulating applications. There are, however, many cases of alopecia, regardless of the cause, which do not readily respond, and still many others unfortunately which do not respond

at all to these methods of treatment, no matter how skillfully prescribed.

The beneficial action of the high frequency spark is twofold, both stimulating and bacterioidal, and may be summarized as follows: Its prime action in the treatment of alopecia rests in its power to produce a vasomotor dilatation, causing a physiologic hyperemia lasting for several hours. This hyperemia is mainly caused by the action of the actinic rays upon the vasomotor nerves. (These rays have been extensively and very successfully used in the form of the Finsen light in the treatment of alopecia areata.) Their action is materially enhanced by the severe electric bombardment and also by the heat effects.

During the period of hyperemia, which lasts from six to twelve hours, the hair follicles receive an increased blood supply and increased resistance to germ invasion is established. The fact that this hyperemia ceases after a few hours is very important, as when a hyperemia lasts for several days or weeks it becomes a chronic congestion, causing a hypertrophy of the connective tissue cells, produces a soil of low vitality, and liable to produce very untoward results. The bactericidal properties of the spark are both powerful and penetrating. The effect is produced by the actinic rays, by the heat effects, and also by the production of large quantities of ozone. This ozone is practically produced upon the scalp and undoubtedly penetrates to some extent, for its odor can be detected some hours after a treatment.

It is not necessary, but often advisable, to employ the various chemical combinations in conjunction with the high frequency treatment, and to continue the occasional use of a mild solution having both antiseptic and stimulating properties for some time after cessation of treatment.

Attention has already been called to the fact that the ordinary case of alopecia can usually be readily overcome by the judicious use of the various chemicals. The high frequency treatment should therefore be reserved for the obstinate cases.—MACKEE, *New York Medical Journal*, July 28, 1906.

## ORTHOPEDIC SURGERY

Conducted by

WILLIAM E. BLODGETT, M. D.

**A Study of Plaster-of-Paris Bandages.—**

MEISENBACH contributes an instructive article, from which the following quotations are made:

The technic of applying and manipulating the bandage are the same for both the pure plaster bandage and the cement bandage. Having prepared the proper bandages for use, they should be placed longitudinally into the solution which should be as near seventy degrees Fahrenheit as possible. They should not be placed upon their ends in the solution, because gravity and the air bubbles formed will cause the plaster to settle to the lower end of the bandage; this will result in an unequal distribution of plaster. The bandages should be allowed to remain in the solution until the air bubbles have ceased to rise. On removing the bandages from the solution, each end should be firmly grasped with a hand and squeezed so that no plaster can escape.

As the bandages are used, they should be handed to the surgeon each in a consecutive drier condition than the preceding. This assures a homogeneous set of the entire dressing.

In the process of application, the bandages should be unrolled twelve or more inches, and these strands of unrolled bandage conformed to the part with equal pressure. Each layer should be thoroughly rubbed with the hand as it is applied. This cannot be emphasized too much because by this procedure the life and strength of a dressing can be increased by at least a third.

Speed in manipulation is an important factor in all plaster work; the plaster dressing should be finished before the actual set has taken place. After the last bandage has been applied, the dressing should not receive any more plaster or water; if smoothness is desired the dressing may be rubbed en masse for a few seconds. The number of bandages to be applied depends on the nature of the part included and the age of the patient; however, it can roughly be stated that from eight to ten layers are sufficient, except over joints, especially over the hip and knee; over these the dressing should be reinforced, either with the plaster-of-Paris bandage turned upon itself, or by incorporating strips of rattan between the layers of plaster.

MEISENBACH finds pure dental plaster, i. e., without accelerators of any kind, and strips six yards long and four inches wide of starch-sized crinoline forty threads to the inch (as the Vigilant brand) the best materials. He comes to the following conclusions:

The essential things of value for a good plaster dressing for practical purposes are: 1. Strength. 2. Quick set. 3. Light weight. 4. Ventilation.

These are brought about and influenced to a great degree by the substances added to the plaster; the knowledge of the action of these will enable us to obtain any kind of dressing which we may desire, and especially to regulate the time of set.

Thus chloride of sodium in small amounts hastens the set; in large amounts retards it; in any amount it weakens the dressing by decreasing the crushing force and tensile strength. Moreover it weakens the dressing in direct proportion to the amount used. Dextrin in small amounts strengthens the dressing by increasing both the crushing force and tensile strength, but it also lengthens the time of set in direct proportion to its use. If the time of set is no object, it may be used to good advantage in certain cases as, for instance in making a plaster bed for multiple tubercular bone lesions. Starch in small amounts (that which is contained in starch-sized bandage) adds to the strength by increasing the tensile strength. It does not interfere with the set of the bandage.

Portland cement when used in the plaster-of-Paris bandage has the great advantage over chloride of sodium and dextrin in that it can be mixed with the plaster (five per cent) before the bandages are made and that it materially strengthens the bandage in all its essentials, i. e., increases the crushing force, tensile strength, and at the same time reduces the time of set and density. The density with it is less than the density of the pure plaster itself. The dressings made of the cement bandage are of a light sage color and are not easily affected by perspiration. They are much stronger and lighter than the pure plaster dressings.

Plaster dressings are usually fairly well ventilated by the vibration of the soft parts of the body, yet we often have a case in which this is below par, and in hot weather especially it is of great comfort to the patient to be able to have ventilation to the greatest amount possible. It has been found that if a dressing (a jacket or full spica for example) is made of the most porous material possible, that it can be worn at least twice as long and with more comfort. This fact is well noted in cases where it is desired to retain the same dressing over a long period as is the case in acute Pott's disease, where the future course of the disease often depends upon a long and uninterrupted immobilization of the spine.

In conclusion it may be said that the object of any plaster dressing is to apply as few bandages as possible and still retain the strength, which can be done only by using a bandage of the greatest efficiency.—*Am. Jour. Orthopedic Surg.*, July, '06, IV, 1, p. 1.